

JOHNS HOPKINS UNIVERSITY CIRCULARS

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GENERAL STATEMENTS AS TO THE COURSES OF INSTRUCTION.

The Johns Hopkins University will begin its twenty-eighth year of instruction October 6, 1903.* The work will go forward in these divisions:

The Graduate department, in which arrangements are made for the instruction of advanced students in the higher studies of literature and science.

The Undergraduate or Collegiate department, in which students receive a liberal education leading to the degree of Bachelor of Arts.

The Medical department, in which students who have already received a liberal education are received as candidates for the degree of Doctor of Medicine, and in which Doctors of Medicine may attend special courses.

In other words, arrangements are made for the instruction of the following classes:

1. Graduate students and other qualified persons desiring to continue for one or more years their liberal education, and possibly to become candidates for the degree of Doctor of Philosophy.

2. Graduate students and other qualified persons wishing to proceed to the degree of Doctor of Medicine.

3. Doctors of Medicine who desire to follow special courses of lectures and laboratory work.

4. Undergraduates looking forward to the degree of Bachelor of Arts.

5. Special students who have not received an academic degree and are not candidates for a degree, but who desire to follow special courses of instruction in literature and science.

The medical department is open to women; the other departments are not.

An academic building, called McCoy Hall, in commemoration of its donor, contains the library

and the class-rooms in languages, literature, history, and philosophy.

Laboratories are provided in Chemistry, Physics and Electricity, Geology and Mineralogy, and in the Biological Sciences (Anatomy, Physiology, Zoölogy and Botany, and Pathology).

Seminaries are organized in the Greek, Latin, Romance, German, English, Sanskrit, and Semitic languages, in Mathematics and Physics, and in History, Political Economy, Political Science. There are various scientific associations and journal clubs which hold regular meetings.

The Library contains more than one hundred and ten thousand volumes, part of which are kept in the central reading room, while the remainder of the books are distributed according to their subjects in the different laboratories and seminaries.

The Library of the Peabody Institute contains one hundred and fifty thousand volumes. These books are selected with reference to the wants of scholars. They are well chosen, well arranged, well bound, and well catalogued, and are accessible daily from nine in the morning until half-past ten in the evening.

The proximity of Baltimore to Washington enables the students to visit the libraries, museums, and scientific foundations of the Capital.

The academic year extends from the first of October to the fifteenth of June.

The charge for tuition is one hundred and fifty dollars per annum in the graduate and undergraduate departments, and two hundred dollars in the medical department.

The Annual Register, giving full statements as to the regulations and work of the University, and separate announcements of the Medical and Collegiate Courses, will be sent on application.

*The entrance examination of undergraduates will begin September 30; instruction in all departments October 6.

FACULTIES OF PHILOSOPHY AND MEDICINE, 1903-04.

IRA REMSEN, M. D., Ph. D., LL. D.,
President.

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Professor of Gynecology.
WILLIAM K. BROOKS, Ph. D., LL. D.,
Professor of Zoology.
MAURICE BLOOMFIELD, Ph. D., LL. D.,
Professor of Sanskrit and Comparative Philology.
A. MARSHALL ELLIOTT, Ph. D., LL. D.,
Professor of the Romance Languages.
WILLIAM S. HALSTED, M. D.,
Professor of Surgery.
HARMON N. MORSE, Ph. D.,
Professor of Analytical Chemistry.
HENRY WOOD, Ph. D.,
Professor of German.
EDWARD RENOUF, Ph. D.,
Collegiate Professor of Chemistry.
JOHN J. ABEL, M. D.,
Professor of Pharmacology.
WILLIAM H. HOWELL, Ph. D., M. D.,
Professor of Physiology, and Dean of the
Medical Faculty.
FRANKLIN P. MALL, M. D.,
Professor of Anatomy.
JAMES W. BRIGHT, Ph. D.,
Professor of English Philology.
WILLIAM HAND BROWNE, M. D.,
Professor of English Literature.
HERBERT E. GREENE, Ph. D.,
Collegiate Professor of English.
WILLIAM B. CLARK, Ph. D.,
Professor of Geology.
JOSEPH S. AMES, Ph. D.,
Professor of Physics.
J. WHITRIDGE WILLIAMS, M. D.,
Professor of Obstetrics.
FRANK MORLEY, M. A., Sc. D.,
Professor of Mathematics.
HARRY F. REID, Ph. D.,
Professor of Geological Physics.
ROBERT W. WOOD, A. B.,
Professor of Experimental Physics.
KIRBY F. SMITH, Ph. D.,
Professor of Latin.
WILLIAM D. BOOKER, M. D.,
Clinical Professor of Pediatrics.
JOHN N. MACKENZIE, M. D.,
Clinical Professor of Laryngology.
SAMUEL THEOBALD, M. D.,
Clinical Professor of Ophthalmology and Otology.
HENRY M. THOMAS, M. D.,
Clinical Professor of Neurology.
J. WILLIAMS LORD, M. D.,
Clinical Professor of Dermatology.

THOMAS C. GILCHRIST, M. R. C. S.,
Clinical Professor of Dermatology.
HENRY J. BERKLEY, M. D.,
Clinical Professor of Psychiatry.
NICHOLAS MURRAY, A. B., LL. B.,
Librarian.
EDWARD H. SPIEKER, Ph. D.,
Associate Professor of Greek and Latin.
ETHAN A. ANDREWS, Ph. D.,
Associate Professor of Biology.
JOHN M. VINCENT, Ph. D.,
Associate Professor of History.
WILLIAM S. THAYER, M. D.,
Associate Professor of Medicine.
JOHN M. T. FINNEY, M. D.,
Associate Professor of Surgery.
LORRAIN S. HULBURT, Ph. D.,
Collegiate Professor of Mathematics.
C. W. EMIL MILLER, Ph. D.,
Associate Professor of Greek.
BERT J. VOS, Ph. D.,
Associate Professor of German.
ROSS G. HARRISON, Ph. D.,
Associate Professor of Anatomy.
JACOB H. HOLLANDER, Ph. D.,
Associate Professor of Political Economy.
CHRISTOPHER JOHNSTON, Ph. D.,
Associate Professor of Oriental History, etc.
C. CARROLL MARDEN, Ph. D.,
Associate Professor of Spanish.
EDWARD B. MATHEWS, Ph. D.,
Associate Professor of Mineralogy.
WESTEL W. WILLOUGHBY, Ph. D.,
Associate Professor of Political Science.
WILLIAM W. RUSSELL, M. D.,
Associate Professor of Gynecology.
THOMAS S. CULLEN, M. B.,
Associate Professor of Gynecology.
REID HUNT, Ph. D., M. D.,
Associate Professor of Pharmacology.
HARRY C. JONES, Ph. D.,
Associate Professor of Physical Chemistry.
EDWARD C. ARMSTRONG, Ph. D.,
Associate Professor of French.
PHILIP OGDEN, Ph. D.,
Associate Professor of French Literature.
ROBERT L. RANDOLPH, M. D.,
Associate Professor of Ophthalmology and Otology.
THOMAS B. FUTCHER, M. B.,
Associate Professor of Medicine.
WILLIAM J. A. BLISS, Ph. D.,
Collegiate Professor of Physics.
CHARLES R. BARDEEN, M. D.,
Associate Professor of Anatomy.
DUNCAN S. JOHNSON, Ph. D.,
Associate Professor of Botany.
WALTER JONES, Ph. D.,
Associate Professor of Physiological Chemistry.
WILLIAM G. MACCALLUM, M. D.,
Associate Professor of Pathology.
GEORGE B. SHATTUCK, Ph. D.,
Associate Professor of Physiographic Geology.
HARRY L. WILSON, Ph. D.,
Associate Professor of Latin.
JOSEPH C. BLOODGOOD, M. D.,
Associate Professor of Surgery.
HARVEY W. CUSHING, M. D.,
Associate Professor of Surgery.
BOLLING W. BARTON, M. D.,
Lecturer in Systematic Botany.

PHILIP R. UHLER, LL. D.,
Associate in Natural History.
BERNARD C. STEINER, Ph. D.,
Associate in History.
JAMES C. BALLAGH, Ph. D.,
Associate in History.
ABRAHAM COHEN, Ph. D.,
Associate in Mathematics.
J. ELLIOTT GILPIN, Ph. D.,
Associate in Chemistry.
GEORGE C. KEIDEL, Ph. D.,
Associate in Romance Languages.
JOHN B. WHITEHEAD, JR., Ph. D.,
Associate in Applied Electricity.
FRANK R. SMITH, M. D.,
Associate in Medicine.
H. BARTON JACOBS, M. D.,
Associate in Medicine.
STEWART PATON, M. D.,
Associate in Psychiatry.
OLIVER L. FASSIG, Ph. D.,
Associate in Meteorology.
PERCY M. DAWSON, M. D.,
Associate in Physiology.
THOMAS MCCRAE, M. D.,
Associate in Medicine.
EUGENE L. OPIE, M. D.,
Associate in Pathology.
FRANK W. LYNCH, M. D.,
Associate in Obstetrics.
HUGH H. YOUNG, M. D.,
Associate in Genito-Urinary Surgery.
CASWELL GRAVE, Ph. D.,
Associate in Zoology.
GUY L. HUNNER, M. D.,
Associate in Gynecology.
SAMUEL AMBERG, M. D.,
Associate in Pediatrics.
MURRAY P. BRUSH, Ph. D.,
Associate in Romance Languages.
CHARLES P. EMERSON, M. D.,
Associate in Medicine.
JOSEPH ERLANGER, M. D.,
Associate in Physiology.
WARREN H. LEWIS, M. D.,
Associate in Anatomy.
WILLIAM ROSENAT, Ph. D.,
Associate in Post-Biblical Hebrew.
J. EUSTACE SHAW, Ph. D.,
Associate in Italian.
S. EDWIN WHITEMAN,
Instructor in Drawing.
GUY CARLETON LEE, Ph. D.,
Instructor in History.
LOUIS P. HAMBURGER, M. D.,
Instructor in Medicine.
HENRY McE. KNOWER, Ph. D.,
Instructor in Anatomy.
GEORGE E. BARNETT, Ph. D.,
Instructor in Political Economy.
WILLIAM S. BAER, M. D.,
Instructor in Orthopedic Surgery.
WILLIAM KURRELMAYER, Ph. D.,
Instructor in German.
HARRY T. MARSHALL, M. D.,
Instructor in Medicine.
CHARLES R. McINNES, Ph. D.,
Director of the Gymnasium.

In addition, there is a considerable number of
other Instructors and Assistants in the laboratories.

PROGRAMMES FOR 1903-1904.

The following courses in literature and science are offered for the academic year which begins October 6, 1903. They are open to properly qualified young men, according to conditions varying somewhat in each department.

MATHEMATICS

Advanced Courses

Professor MORLEY.

Higher Geometry.

Three times weekly, through the year.

Vector Analysis.

Twice weekly, first half-year.

Kinematics.*

Twice weekly, second half-year.

Dr. COHEN.

Partial Differential Equations.

Twice weekly, through the year.

Differential Geometry.

Twice weekly, first half-year.

Theory of Numbers.

Twice weekly, second half-year.

Elementary Theory of Functions.

Twice weekly, through the year.

Undergraduate Courses

For Candidates for Matriculation

Algebra (special topics); Solid Geometry; Plane Trigonometry;
Analytic Geometry (straight line and loci).

Four hours weekly, through the year.

Students who complete this course in a satisfactory manner, will not be required to pass any further examination in mathematics for matriculation.

Minor Course*

Analytic Geometry.

Four hours weekly, until the Christmas recess. Professor HULBURT.

Differential and Integral Calculus.

Four hours weekly, from the Christmas recess until the end of the year. Professor HULBURT.

Practical Exercises.

Two hours weekly. Professor HULBURT.

Major Course

Determinants; Differential and Integral Calculus (special topics).

Four hours weekly, until the Christmas recess. Professor HULBURT.

Elementary Theory of Equations.

Four hours weekly, during January. Professor HULBURT.

Elements of Projective Geometry.

Four hours weekly, during February and March. Professor HULBURT.

Analytic Geometry of Three Dimensions.

Four hours weekly, during April and May. Professor HULBURT.

Practical Exercises.

Two hours weekly. Professor HULBURT.

The work designated as Practical Exercises consists, in both the Minor and Major Courses, of practice in the use of mathematical instruments, in

*A "Minor Course" in any subject is the first year of instruction in it; a "Major Course" is the second year.

the drawing of curves, in the graphical solution of problems, and in making mathematical computations. This work is not designed to increase the amount of work required of students in these courses, but rather to facilitate their preparation of the class work. It is under the direction of Professor MORLEY, assisted by Professor HULBURT and Dr. COHEN.

Elective Course

Differential Equations.

Two hours weekly, through the year. Dr. COHEN.

This course presents the elementary principles of Ordinary and Partial Differential Equations, and affords to students of physics, astronomy, and electricity a necessary working knowledge of the subject. Much time is devoted to the solution of problems.

PHYSICS

The courses in Physics are designed (1) for those students prepared for advanced work who wish to devote themselves to some special research in Physics, or to become candidates for the degree of Doctor of Philosophy in Physics; (2) for graduate and special students who wish to extend their knowledge of Physics, or to select it as one of their subordinate subjects for the degree of Doctor of Philosophy; (3) for undergraduate students who desire to study Physics for the purposes of general education.

Advanced Work for Graduate Students

Laboratory

Under the direction of Professors AMES and WOOD. *Daily, except Saturday, from 9 a. m. to 5 p. m.*

Advanced students are expected to give as much of their time as possible to laboratory work. This consists at first in carrying out experiments which familiarize the student with the use of instruments for exact measurement and with experimental methods. When sufficient experience of this kind has been acquired, the student undertakes, under the guidance of the instructors, some experimental research designed to be of permanent value.

Seminary and Journal Meetings

All advanced students are expected to meet with the instructors twice a week, once for the meetings of the Physical Seminary and once for the discussion of the current physical journals.

In the Seminary, which is directed by Professor AMES, a series of papers is presented by the members upon selected topics of present or historical importance. An attempt is made to stimulate original work and to maintain the interest in the purely experimental side of Physics, as distinct from the theoretical or mathematical. During the year 1903-1904 questions pertaining to Physical Optics will be discussed.

At the journal meetings reports upon articles in the physical journals are carefully prepared by the students and are presented for discussion.

Among the journals on which reports are regularly given are the following: The Philosophical Magazine, The American Journal of Science, The Physical Review, The Astrophysical Journal, Annalen der Physik, Zeitschrift für physikalische Chemie, Journal de Physique, Annales de Chimie

et de Physique, *Physikalische Zeitschrift*, *Zeitschrift für Instrumentenkunde*, *Nature*, *Comptes Rendus*, *London Electrician*, the *Proceedings of the Royal Society of London* and of many other societies.

Lectures

1. General Physics. Professor AMES. *Four hours weekly, through the year.*

This is a course of lectures continuing for three years, and includes the subjects of Theoretical Mechanics, Hydrodynamics, Elasticity, Sound, Thermodynamics, Heat Conduction, Electricity and Magnetism, and Light. The mathematical treatment of the subjects is fully developed, beginning, however, in an elementary manner.

During the year, 1903-1904, the lectures will be on Thermodynamics, Heat Conduction, and Light.

2. Physical Optics. Professor WOOD. *Three hours weekly, through the year.*

This course will include an extended study of the theory of diffraction and of the modern treatment of dispersion and metallic reflection.

3. Spectroscopy. Professor WOOD. *Weekly, through the year.*

There will be given in this course a full description of the experimental methods of spectroscopy and of the more important conclusions of recent investigations.

4. Applied Electricity. Dr. J. B. WHITEHEAD.

First Year. Two hours weekly, through the year.

Electrical measurements, magnetic principles, distributing systems, direct current apparatus, alternating current principles and apparatus.

Second Year. (Advanced Course.) Two hours weekly, through the year.

Dynamo design, alternating current dynamos, motors, and transformers, rotary converters, polyphase transmission systems, etc.

These courses are designed for students of Physics and also for those who wish to pursue special work along lines of electrical engineering.

5. Laboratory Course in Applied Electricity. Dr. J. B. WHITEHEAD. *Two afternoons weekly, through the year.*

In this course instruction is given in the practical use and study of dynamos, motors, transformers, power-transmission plants, etc. This laboratory work accompanies Course 4.

6. Terrestrial Magnetism. Dr. L. A. BAUER.

A brief course is given each year in the theory and use of instruments designed for the measurement of the magnetic elements; and the existing theories of terrestrial magnetism are also discussed.

7. The Elements of Astronomy. Mr. L. E. JEWELL. *Weekly, through the year.*

In this course of lectures attention is directed to those branches of Astronomy which should be known by all students of Physics; and the theory of various instruments is explained.

8. Observatory Work in Astronomy. Mr. L. E. JEWELL. *Through the year.*

The observatory contains an equatorial, transit, meridian circle, and various other instruments, instruction in the use of which is given to those who follow Course 7.

Courses 7 and 8 are open to undergraduate students as well as to graduates.

Collegiate Courses

These courses are adapted to undergraduates and to those graduate students who wish to extend their knowledge of Physics but are not prepared for more advanced work.

Lectures

1. The Elements of Physics (*Minor Course*). Professor AMES and Dr. WHITEHEAD. *Four hours weekly, through the year.*

2. Advanced Physics (*Major Course*). Professor BLISS. *Four hours weekly, through the year.*

These two courses of lectures are intended to include the field of General Physics, so far as the time allotted permits. The first course presupposes a knowledge of the elements of plane trigonometry; and the second, the elements of analytical geometry of two dimensions and of the calculus.

Either of these courses together with suitable laboratory work (see below) may be offered as a subordinate study for the degree of Doctor of Philosophy.

3. See courses 7 and 8 described above under "Advanced Work for Graduate Students."

Laboratory Work

1. Laboratory work for beginners. Professor BLISS and Dr. WHITEHEAD. *Daily, except Saturday, 2 to 5 p. m., through the year.*

2. Advanced laboratory work. Professor BLISS and Dr. WHITEHEAD. *Daily, except Saturday, 2 to 5 p. m., through the year.*

Two afternoons a week are spent in the laboratory by all undergraduate students and by those graduate students who offer Physics as a subordinate study for the degree of Doctor of Philosophy.

In the elementary work, the students are taught methods of exact observation and measurement, and study the fundamental phenomena of Physics qualitatively. In the advanced work problems and investigations of greater difficulty are undertaken, and special attention is given the theory of the experiments and methods. Carefully prepared reports of work are required of all students.

CHEMISTRY

The courses in Chemistry are intended to meet the wants (1) of graduate students who make Chemistry their specialty, or who select it as one of their subordinate subjects for the degree of Doctor of Philosophy; and (2) of undergraduate students, who study Chemistry for general training, or as a preliminary to the study of medicine. The first and second years' courses cover the ground of General Chemistry, as far as it is possible to do so in the time occupied. Together they form the full course designed for undergraduates. Graduates, including those who intend to enter the medical department, who have not done an equivalent amount of work, will follow such parts of these courses as may seem desirable.

Advanced Work for Graduate Students

Laboratory

Under the direction of Professors REMSEN and MORSE and Associate Professor JONES. *Daily, except Saturday, from 9 a. m. to 5 p. m.*

The work will consist in a thorough study of analytic methods, in making typical preparations especially of compounds of carbon, in practice in the methods of physical chemistry, and in carrying on investigations.

Lectures

(a) Compounds of Carbon, by Professor REMSEN. *Three times weekly, through the year.*

(b) Seminary for advanced students, conducted by Professor MORSE. *Twice weekly, through the year.*

(d) Physical Chemistry, by Associate Professor JONES. *Three times weekly, through the year.*

Journal Meetings.—The instructors and advanced students will meet weekly, on Saturdays at 9 a. m., and at such other hours as may be appointed, for the purpose of hearing reports on the principal articles contained in the journals of Chemistry.

The journals read and regularly reported on are: *Annalen der Chemie*, *Berichte der deutschen chemischen Gesellschaft*, *Journal of the Chemical Society (London)*, *Journal für praktische Chemie*, *Zeitschrift für analytische Chemie*, *Zeitschrift für physikalische Chemie*, *American Chemical Journal*, *Journal of the Society of Chemical Industry*, *Bulletin de la Société chimique*, *Annales de Chimie et de Physique*, *Zeitschrift für anorganische Chemie*, and occasionally others.

Collegiate Courses

Minor Course

(a) Introduction to General Chemistry.

Lectures and recitations, four hours weekly, through the year. Lectures by Professor RENOUF; recitations conducted by Professor RENOUF and Dr. WATERS.

(b) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor RENOUF and Dr. GILPIN.

No previous knowledge of chemistry is required. The class-room work is based on Remsen's Chemistry (Briefer Course), and covers the field of inorganic chemistry, as far as possible. The last twenty class-room exercises give a sketch of organic chemistry, particularly for the benefit of those students whose study of chemistry is confined to the minor course. In the laboratory the student repeats the experiments performed in the class-room, and, in addition, has some practice in simple qualitative and quantitative analysis. Each student is required to keep a note-book of his work.

Major Course

(a) Advanced Inorganic Chemistry.

Lectures and recitations, four hours weekly, until Christmas. Dr. GILPIN.

(b) Chemistry of the Compounds of Carbon.

Lectures and recitations, four hours weekly, from January 1 to the end of the year. Dr. GILPIN.

(c) Laboratory Work.

Five to six hours weekly, through the year, under the direction of Professor RENOUF.

The class-room work in inorganic chemistry, in the major course, is confined to a study of the metallic elements and to analytical chemistry. The laboratory work until January is systematic qualitative analysis; from January to the end of the year, the making of inorganic and organic preparations. The compounds to be made are so chosen that the student may become acquainted with as many classes and methods as possible. The text-books used are Remsen's College Text-book of Chemistry, Remsen's Organic Chemistry, and Renouf's Inorganic Preparations.

GEOLOGY

The instruction in Geology is under the direction of Dr. WM. BULLOCK CLARK, Professor of Geology, assisted by Dr. HARRY FIELDING REID, Professor of Geological Physics, Dr. EDWARD B. MATHEWS, Associate Professor of Mineralogy and Petrography, Dr. GEORGE B. SHATTUCK, Associate Professor of Physiographic Geology, Dr. OLIVER L. FASSIG, Associate in Meteorology, and Dr. G. C. MARTIN, Instructor in Paleontology.

Brief courses of lectures will be given by Professor CLEVELAND ABBE, of the United States Weather Bureau, Lecturer on Meteorology, and Dr. L. A. BAUER, of the United States Coast and Geodetic Survey, Lecturer on Terrestrial Magnetism.

Courses are offered to both graduates and undergraduates. In the case of graduate students, the work is arranged to meet the wants (1) of those who desire to make Geology their principal subject for the degree of Doctor of Philosophy, and (2) of those who wish to select certain courses in Geology for one or both of their subordinate subjects, the major subject being taken in another department. Special arrangements may also be made by graduate students whose time is limited, or who desire to devote their attention to particular courses without reference to a degree.

In the case of undergraduate students, Geology may be taken either as one of the major or as one of the minor courses for the degree of Bachelor of Arts.

The courses consist of lectures, laboratory and field work, and conferences upon topics of current literature. Great importance is attached to laboratory training as a part of the geological course, and facilities are given for daily work from 9 a. m. to 5 p. m.

LECTURE COURSES

1. General Geology, by Professor Clark and Dr. Shattuck. *Four times weekly.*

2. Paleontology, by Professor Clark and Dr. Martin. *Twice weekly.*

3. Historical Geology, by Professor Clark. *Twice weekly.*

4. Geological Physics, by Professor Reid. *Twice weekly, second half-year.*

5. Exploratory Surveying, by Professor Reid. *Twice weekly for one-third year.*

6. Geological Field Methods, by Professor Reid and Associate Professors Mathews and Shattuck.

7. General Mineralogy, by Associate Professor Mathews. *Four times weekly.*

8. Advanced Mineralogy, by Associate Professor Mathews. *Three times weekly.*

9. Petrography, by Associate Professor Mathews. *Three times weekly.*

10. Physiographic Geology, by Associate Professor Shattuck. *Weekly.*

11. Climatology, by Dr. Fassig. *Twice weekly for one-third year.*

12. Meteorology, by Professor Abbe.

13. Terrestrial Magnetism, by Dr. Bauer.

LABORATORY WORK

Laboratory courses are arranged to accompany the lectures, while advanced or special students will be given the opportunity to carry on fuller investigations upon either described or new materials.

CONFERENCES AND STUDENT LECTURES

In order that the advanced students may be kept in touch with the most recent investigation in the science, conferences are held at which the leading journals in geology are reviewed by the students under the direction of the instructors. The conferences take place bi-weekly.

In order that the advanced students may also have the experience necessary for the successful preparation and delivery of class-room lectures, a course upon some phase of geology is arranged, a special topic being assigned to each student. The lectures take place bi-weekly, alternating with the conferences.

FIELD WORK

The area of the State of Maryland includes, notwithstanding its comparatively small size, a remarkable sequence of geological formations. The ancient rocks of the earth's crust, as well as those still in the process of deposition, are found, while between these wide limits there is hardly a geological epoch which is not represented. As a result, most excellent facilities are afforded for a study of the various geological horizons.

GEOLOGICAL LABORATORY AND LIBRARY

The Geological Laboratory is situated in Hopkins Hall, and comprises over thirty rooms, large and small. Here are placed the library, apparatus and collections, which are accessible to the student daily, from 9 a. m. to 5 p. m.

In accordance with the custom of the University, those books relating to the work of the geological department are given into its charge, the books of general reference being retained in the University library.

The Library of the geological department contains a good representation of the leading journals and works of reference upon geological subjects. It is greatly enriched by the Williams, Lewis and Abbe libraries. Extensive series of topographical and geological maps likewise form a portion of the library, and these are constantly increasing in number.

APPARATUS AND COLLECTIONS

The collections of the department consist primarily of a large amount of important material brought together from Maryland and adjacent States. It represents all the horizons of the State, being especially rich in crystalline rocks, and in Cretaceous and Tertiary fossils. Some of this material has been already described, while much awaits further study.

Among the most important of the special collections are:

The Williams collection of rocks and minerals, the Lewis collection of rocks and thin sections, the Krantz collection of fossils, the Hill collection of rocks and characteristic fossils from the Cretaceous formations of Texas, and the Stürtz, the Lehmann, and the Allen collections.

STATE SCIENTIFIC BUREAUS CONNECTED WITH THE GEOLOGICAL DEPARTMENT

Two scientific bureaus, established by the Legislature and maintained at the expense of the State, are carried on in connection with the geological department. They are the Maryland Geological and Economic Survey and the Maryland State Weather Service. Professor Clark is in charge of both of these organizations, which are concerned with a study of the geology and physical features of the State of Maryland. A sum of \$27,000 annually is appropriated by the State for the bureaus.

ZOOLOGY AND BOTANY

The courses in Zoölogy and Botany are designed (1) for students who wish to make Zoölogy or Botany a subject of advanced study and research, or the principal or a subordinate subject for the degree of Doctor of Philosophy; (2) for undergraduates who desire some knowledge of the biological sciences as part of a liberal education; and (3) for undergraduates who desire to prepare themselves for the study of medicine.

The various laboratories are open daily during the session from 9 a. m. to 5 p. m.

Graduate Courses

The work in Zoölogy and Botany is directed by Dr. W. K. Brooks, Professor of Zoölogy, assisted by Dr. E. A. Andrews, Associate Professor of Biology, Dr. D. S. Johnson, Associate Professor of Botany, Dr. B. W. Barton, Lecturer in Systematic Botany, Dr. Caswell Grave, Associate in Zoölogy, and other assistants.

1. Professor Brooks will conduct the following courses, with the assistance of Dr. Andrews.
Advanced laboratory work in Zoölogy.
Daily, throughout the year.
Zoölogical Journal Club.
Weekly, until April 1, for the discussion of the current literature of Zoölogy.
Zoölogical Seminary.
Weekly, from the beginning of the session, until April 1.
Three lectures a week, from January 1 to the spring recess, on Comparative Embryology.
2. Dr. Johnson will conduct the following courses:
The Comparative Morphology of the Vegetable Kingdom.
Two lectures and two laboratory exercises weekly, throughout the year.
Botanical Journal Club.
Weekly, throughout the year.
Botanical Seminary.
Weekly, throughout the year.
3. Dr. Grave will give, in February, a course of ten lectures on Echinoderms.

Herbaria

Captain John Donnell Smith, of Baltimore, has kindly consented to allow students to avail themselves of the opportunities offered in his private herbarium, which includes some 100,000 sheets of specimens from all parts of the world, and which is especially rich in its representation of the Flora of the United States and of the American tropics. He has also offered to special students the privilege of consulting his extensive botanical library.

Students of Botany have access also to the Schimper collection of European phanerogams, the Fitzgerald collection of mosses, and the local collection of the Baltimore Naturalists' Field Club.

Library Facilities

A working library of monographs and periodicals for students of Zoölogy and Botany is contained in the biological laboratory of the university. A similar library for students of Physiology, Anatomy, and Pathology is provided in the physiological building of the Medical School and in the Johns Hopkins Hospital.

The general library of the university receives all the chief journals of general science, and the transactions of the leading learned societies of the world.

The library of the Peabody Institute, within five minutes' walk of the university, contains complete sets of many of the chief biological journals and of the proceedings of the learned societies, and other works of reference.

Publications

The University Circulars provide for the prompt publication of abstracts of researches, or parts of researches, as soon as they are completed and ready for publication.

From time to time extensive memoirs of investigation in Zoölogy are issued by the University Press in a series of illustrated quarto Morphological Monographs.

Collegiate Instruction

The regular undergraduate instruction in normal biology extends over two years. The first year constitutes a *minor course* and may be taken separately.

Special students, who are not graduates or matriculates, may enter the courses for undergraduates, on giving satisfactory evidence of fitness.

In addition to valuable training of the powers of observation and thought, the courses in biology present the science of life in its most fundamental aspects, and thus serve as a basis for the study of the phenomena of human existence dealt with in history, political economy, psychology, and ethics. They are open to all students, no previous training being required; and they will be found useful to those looking forward to a career in the ministry, to those designing to enter the medical profession, and to all who are interested in Natural History. In addition to the regular courses, the excursions of the Naturalists' Field Club, which are open to all, afford opportunities for a less formal study of nature.

Minor Course

General Biology.

Five to six hours laboratory work and four lectures and exercises weekly, through the year. Associate Professor ANDREWS, with the aid of Dr. BARTON and laboratory assistants.

In the laboratory, the student studies, with the aid of the microscope and dissections, the life-history and structure of certain animals and plants; the skeletons of man and animals; the development of the frog and the fowl; and the elements of systematic botany. In the lecture room, fundamental facts and laws are emphasized.

This course is required of all who wish to enter the medical school.

Major Course

ZOOLOGY

The chief work in the laboratory is the dissection of the skate, shark, cod, frog, pigeon, and rabbit, and the practical study of the embryology of the chick and the pig. Selected types of some of the great groups of invertebrates such as a jelly-fish, star-fish, crab, grasshopper, and squid, are also dissected, and a part of the time is devoted to the study of the genera and species of fishes, and to the practical use of analytical keys for the identification of species.

BOTANY

The course will include work on the structure and physiology of the vegetative organs of plants, with constant reference to the relation of each type of structure to the distribution and environment of the plants possessing it.

The major courses are designed for those who intend to teach zoölogy or botany; for those who look forward to advanced studies in these subjects; for those who desire an acquaintance with the elements of zoölogy, of comparative anatomy and embryology, or of botany, as a part of a liberal education; and for those students who, having completed the minor course in biology, preliminary to medicine, desire wider acquaintance with the animal kingdom.

1. Laboratory work in Zoölogy, Comparative Anatomy, and Embryology; or in Botany.

Six hours a week throughout the year. Associate Professors ANDREWS and JOHNSON and Dr. GRAVE.

2. Elementary Zoölogy.

Two lectures a week until April 1. Dr. GRAVE.

3. Elementary Botany.

Two lectures a week until April 1. Associate Professor JOHNSON.

4. Embryology.

From April 1 to the end of the session. Associate Professor ANDREWS.

Systematic Botany

The elementary course in systematic Botany (part of minor Biology), given by Dr. BARTON in April and May, is open to any student, without previous training, as an equivalent of part of the course in free-hand drawing.

PHYSIOLOGY

The following courses in Physiology are offered to graduate students:

1. By Professor Howell:

Work leading to the degree of Doctor of Philosophy, with Physiology as the principal subject.

This work includes lectures, laboratory methods, research, and attendance upon the meetings of the physiological seminary and journal club.

2. By Professor Howell, Dr. Dawson, Dr. Erlanger, and Mr. Martin:

Work leading to the degree of Doctor of Philosophy, with Physiology as a subordinate subject. Two courses are offered, either of which will be accepted as absolving the conditions for a subordinate subject. Either course may be taken by graduate students, without reference to a degree:

(a) The course given to medical students, consisting of about three lectures weekly throughout the year, and laboratory work six hours weekly, from October to January. This course is given in the mornings.

(b) An afternoon course consisting of lectures and laboratory work, three afternoons weekly, from January to June.

3. By Professor Howell:

Physiological Journal Club.

Weekly, throughout the year.

4. By Professor Howell:

Physiological Seminary.

Weekly, throughout the year.

Special lectures on selected topics in Physiology, by members of the staff or by advanced students, are given occasionally as part of the Seminary work.

5. By Professor Howell, Dr. Dawson, Dr. Erlanger, and Mr. Martin:

Advanced laboratory work in Physiology, methods of demonstration and research.

This course is intended for those who have completed elementary courses in Physiology. The work is done individually.

ANATOMY

The various courses given in the department of Anatomy are open to graduate students. In addition, opportunities are afforded for advanced work and original investigation. A general outline of the work of the department follows:

I. Systematic instruction in histology, microscopic anatomy, neurology, and embryology by Professor Bardeen, Dr. Knower, Dr. Sabin, and Dr. Myers, from October 1 to May 15, mornings.

II. Systematic instruction in gross human anatomy by Professors Mall and Harrison and Dr. Lewis, from October 1 to March 15, afternoons.

III. Advanced work and original investigation under the direction of Professors Mall, Harrison, and Bardeen, daily, during the academic year.

NOTE.—A more detailed description of the work outlined above will be found in the Announcement of the Medical Department.

PATHOLOGY AND BACTERIOLOGY

Instruction in Pathology and Bacteriology for matriculates in the medical department is given during the second year of the medical course. Special courses in these subjects are provided for physicians during May and June. Pathology or Bacteriology may be selected as one of the subjects available for the degree of Doctor of Philosophy.

The following courses are offered :

- 1. Bacteriology. Professor Welch, Dr. Opie, and Dr. Bassett. October 1 to Christmas. Three half-days weekly. This is a practical laboratory course intended to acquaint the student with technical procedures and with the characters of the important pathogenic micro-organisms.
- 2. Lectures on Infection and Immunity. Professor Welch. Once or twice a week, October 1 to Christmas.
- 3. General Pathology, Pathological Anatomy, and Pathological Histology. Professor Welch, Professor MacCallum, Dr. Opie, and Dr. Marshall. January 4 to June 1. Laboratory course, three afternoons a week.
- 4. Lectures on Pathology to accompany the preceding course. Professor Welch and Professor MacCallum.
- 5. Recitations. Professor Welch. Once a week throughout the year.
- 6. Demonstrations in Gross Morbid Anatomy. Professor MacCallum. Once a week.
- 7. The Conduct of Autopsies. Professor MacCallum.
- 8. Special course in Bacteriology for Physicians. Dr. Opie. May and June. Three afternoons a week.
- 9. Special course in Pathology for Physicians. Professor MacCallum. May and June. Three afternoons a week.
- 10. Lectures on Selected Topics in Pathology and Bacteriology for Physicians. Professor Welch. May and June. Once a week.
- 11. Advanced Work and Special Research. Professor Welch, Professor MacCallum, and Drs. Opie and Marshall. The Pathological and Bacteriological laboratories are open to suitably trained physicians and students for the purposes of advanced study and original investigation. There is an ample supply of the necessary material and apparatus for these purposes.

For more detailed information consult the Annual Announcement of the Medical Department, which will be sent upon application to the Registrar.

GREEK

Greek Seminary

Professor GILDERSLEEVE will conduct the Greek Seminary, the plan of which is based on the continuous study of some leading author or some special department of literature.

The Seminary consists of the director, fellows, and scholars, and such advanced students as shall satisfy the director of their fitness for an active participation in the work by an essay, a critical exercise, or some similar test of attainments and capacity. All graduate students, however, may have the privilege of attending the course.

During the next academic year the study of the *Greek Historians* will constitute the chief occupation of the members and Thukydides will be the centre of the work. There will be two meetings a week during the entire session. Especial attention will be paid to the development of historical style and method.

In connection with the Seminary there will be held a series of conferences on *Greek Historiography*.

The students should possess Herodotos, Thukydides, Xenophon, Polybios, Dionysios of Halikarnassos (rhetorical works), and Schäfer's *Quellenkunde der griechischen Geschichte*.

Advanced and Graduate Courses

1. Professor GILDERSLEEVE will also conduct a course of *Practical Exercises in Greek*, consisting chiefly in extemporaneous translation from Greek into English and English into Greek, two meetings a week from the beginning of the session to the first of January.

2. The subject of *Hermeneutics and Criticism* will be taken up in a series of conferences (Blass being the text-book).

3. Notice of other courses is reserved.

Associate Professor MILLER will conduct the following courses :

1. Readings twice a week in Thukydides during the first half of the year.

2. Lectures and Practical Exercises in Greek Palæography, twice weekly during the latter half of the year.

3. Exercises in advanced Greek composition for the benefit of candidates for the degree of Doctor of Philosophy.

Dr. A. M. SOHO will conduct a course throughout the year in Modern Greek.

The object is to impart a practical knowledge of the language by reading standard authors and by conversation, upon which especial emphasis will be laid. During the second half-year a portion of the time will be devoted to the consideration of the phonetic and morphological laws, which the modern language followed through its development from the classical Greek.

Undergraduate Courses

For Candidates for Matriculation

Homer, *Iliad* (book vi) ; Herodotos (book vii) ; Sight Reading ; Prose Composition.

Three hours weekly, through the year. Associate Professor MILLER.

Minor Course

Lysias (vii, xii).

Three hours weekly, first half-year. Associate Professor SPIEKER.

Private Reading : Xenophon, *Hellenika* (book i).

Plato, *Apology*; Euripides (one play).

Three hours weekly, second half-year. Associate Professor SPIEKER.

Private Reading: Homer, *Iliad* (books XVI, XVIII).

Prose Composition.

Weekly, through the year. Associate Professor SPIEKER.

Major Course

Thukydides (book vii).

Three hours weekly, first half-year. Associate Professor SPIEKER.

Private Reading: Aischylos, *Prometheus*.

Selections from the elegiac, melic, and iambic poets; Sophokles (one play).

Three hours weekly, second half-year. Associate Professor SPIEKER.

Private Reading: Aristophanes (one play).

Prose Composition.

Weekly, through the year. Associate Professor SPIEKER.

The work of the minor course begins with one of the easier prose writers and continues with Homer, or a second prose author. During the last term the study of dramatic poetry is taken up in one of the plays of Euripides, who, of the Greek dramatic poets, is most readily appreciated by the modern reader.

In the major course a more difficult prose author is studied; then selections from the important lyric poets; and at the end of the year a play of Sophocles is read.

The private reading in both years is primarily intended to extend the student's acquaintance with Greek writers; in some instances it throws additional light on what is read in class. The entire course aims to give a general survey of what is best in Greek literature, and a particular knowledge of typical productions in the several departments of prose and poetry.

Elective Course

Dio Chrysostom: Gospel of St. Mark.

Two hours weekly, through the year. Associate Professor SPIEKER.

L A T I N

Latin Seminary

Professor KIRBY FLOWER SMITH will conduct the Latin Seminary, which, as in the department of Greek, is composed of the director, fellows, scholars, and such advanced students as shall give the director satisfactory proofs of their fitness for the work. During the next academic year especial attention will be given to the Roman Satire and the centre of this work will be Horace and Juvenal. Two meetings a week throughout the entire session will be devoted to the critical interpretation of these authors, to various auxiliary studies, and to the presentation of papers prepared by members of the Seminary.

Students should provide themselves in advance with a complete text of Horace, Kiessling's *Satires and Epistles of Horace* (Weidmanns, Berlin), Owen's edition of Persius and Juvenal, which contains the recently discovered Bodleian fragments (Oxford Classical Texts, 1902), Buecheler's edition of Petronius, including the fragments of Varro's *Saturae Menippeae* and the *Apocolocyntosis* of Seneca (Weidmanns, 1875), Baehren's *Fragmenta Poetarum Romanorum* (Teubner, Leipzig, 1886), van der Vliet's Apuleius, *Metamorphoses* (Teubner, 1898), Haupt-Vahlen's, Catullus, Tibullus and Propertius (5th edition, Hirzel, Leipzig, 1885), Lindsay's edition of Martial (Oxford Classical Texts, 1902), and Dessau's *Inscriptiones Latinae Selectae*, vol. 1 (Weidmanns, 1892). Books to be used in other courses will be announced later.

Advanced and Graduate Courses

1. Professor SMITH will lecture on the Roman Satire once a week, throughout the year.

2. During the first half-year he will lecture once a week on the Elegy. He will deal with it more especially as a department, its historical development in style, content, and form, and its affiliations with the Comedy, Satire, and Epigram. Students are requested to familiarize themselves beforehand with the elegies of Tibullus and Propertius and with the *Amores* and *Heroides* of Ovid.

3. During the second half-year he will lecture once a week on the Epigram. The methods and objects of this course are the same as those just stated in connection with the Elegy.

4. He will also conduct a Journal Club, which will meet fortnightly to report and discuss recent publications and topics of general interest in the field of Greek and Latin Philology.

5. Associate Professor Wilson will lecture once a week throughout the year on Latin Epigraphy. This course will give a general introduction to the subject and will be accompanied by a series of practical exercises on facsimiles. Several meetings also will be devoted to the interpretation of selected inscriptions and classes of inscriptions.

6. He will also meet a class each week throughout the year for rapid reading in Horace, Persius, Juvenal, Petronius, Seneca's *Apocolocyntosis*, and Apuleius' *Metamorphoses*.

Notice of other courses is reserved.

Undergraduate Courses

For Candidates for Matriculation

Cicero, *De Senectute*; Nepos (selections).

Two hours weekly, first half-year. Dr. BARRET.

Ovid (selections); Vergil, *Georgics*.

Two hours weekly, second half-year. Dr. BARRET.

Prose Composition.

Weekly, through the year. Dr. BARRET.

Minor Course

Livy (two books).

Three hours weekly, first half year. Dr. BARRET.

Private Reading: Caesar, *Bellum Civile* (book 1); Tacitus, *Agricola*.

Horace (selections).

Three hours weekly, second half-year. Dr. BARRET.

Private Reading: Ovid, *Fasti* (selections); Vergil, *Aeneid* (books IX, XII).

History of Roman Literature (with reading of selected passages).

Weekly, through the year. Professor SMITH.

[For students in Group VI, as a substitute for Prose Composition.]

Prose Composition.

Weekly, through the year. Dr. BARRET.

Major Course

Catullus; Roman Elegy (selections).

Three hours weekly, first half-year. Associate Professor WILSON.

Private Reading: Quintilian (book x).

Plautus (one play); Terence (one play).

Three hours weekly, second half-year. Associate Professor WILSON.

Private Reading: Plautus, *Miles Gloriosus*.

Prose Composition.

Weekly, through the year. Dr. BARRET.

Elective Course

Tacitus (selections).

Two hours weekly, first half-year. Associate Professor WILSON.

Apuleius, *Metamorphoses* (selections).

Two hours weekly, second half-year. Associate Professor WILSON.

ORIENTAL SEMINARY

Oriental History

1. History of the Ancient East (Egypt, Babylonia, Assyria, Persia, Israel and Judah).

Associate Professor JOHNSTON. Friday, 12 m.

2. Historical Geography of Palestine.

Associate Professor JOHNSTON. Wednesday, 12 m.

Biblical Philology

3. The Literature of the Bible (on the basis of the Authorized Version).

Professor HAUPT and Dr. FOOTE. Thursday, 5 p. m.

4. General Introduction to the Hebrew Text of the Old Testament (Masorah, etc.).

Dr. FOOTE. Thursday, 9 a. m.

5. Elementary Hebrew.

Professor HAUPT and Dr. FOOTE. Wednesday, 2-4 p. m.

6. Hebrew (Second Year's Course).

Dr. BLAKE. Thursday, 3 p. m.

7. Hebrew Syntax.

Dr. BLAKE. Thursday, 2 p. m.

8. Reading of Unpointed Hebrew Texts.

Dr. ROSENAU. Wednesday, 9 a. m.

9. Prose Composition (Hebrew, Arabic, Assyrian, Sumerian, Syriac, Ethiopic).

Professor HAUPT. Tuesday, 4-5.30 p. m.

10. Comparative Semitic Grammar.

Professor HAUPT. Monday, 2 p. m.

11. Old Testament Seminary (Critical Interpretation of The Book of Ecclesiastes).

Professor HAUPT. Tuesday, 2-4 p. m.

12. The Ancient Versions of the Book of Ecclesiastes (Greek, Latin, Aramaic, Syriac, etc.).

Associate Professor JOHNSTON, Dr. FOOTE, Mr. OUSSANI. Thursday, 4 p. m.

13. Hebrew Conversation.

Dr. ROSENAU. Wednesday, 10 a. m.

14. Post-Biblical Hebrew (The Mishnic tract *Yomâ*, ed. Strack; Talmud, *Berakhoth*).

Dr. ROSENAU. Tuesday, 9-11 a. m.

15. Lectures on Jewish Ceremonial Institutions.

Dr. ROSENAU. Monday, 5 p. m.

16. Biblical Aramaic Grammar and Interpretation of the Aramaic Portions of the Book of Daniel.

Dr. BLAKE. Thursday, 11 a. m.

Syriac

17. Syriac (Rödiger's Chrestomathy).

Associate Professor JOHNSTON. Tuesday, 12 m.

18. Syriac Prose Composition.

Professor HAUPT. See No. 9.

Arabic

19. Elementary Arabic.

Dr. BLAKE. Monday, 9 a. m.

20. Extracts from Arabic Geographers.

Associate Professor JOHNSTON. Friday, 9 a. m.

21. Reading of Unpointed Arabic Texts.

Mr. OUSSANI. Friday, 3 p. m.

22. Arabic Conversation.

Mr. OUSSANI. Monday, 11 a. m.

23. Arabic Prose Composition.

Professor HAUPT. See No. 9.

Ethiopic

24. Elementary Ethiopic.

Dr. BLAKE. Monday, 10 a. m.

25. Ethiopic Prose Composition.

Professor HAUPT. See No. 9.

Assyriology

26. Elementary Assyrian.

Dr. FOOTE. Monday and Thursday, 12 m.

27. Assyrian Historical Texts.

Associate Professor JOHNSTON. Tuesday and Wednesday, 10 a. m.

28. Babylonian Nimrod Epic.

Professor HAUPT. Monday, 3 p. m.

29. Sumerian Hymns and Penitential Psalms.

Professor HAUPT. Monday, 4 p. m.

30. Assyrian and Sumerian Prose Composition.

Professor HAUPT. See No. 9.

Egyptology

31. Hieroglyphic Egyptian for Beginners.

Associate Professor JOHNSTON. Friday, 10 a. m.

32. Coptic (Steindorff's Grammar).

Associate Professor JOHNSTON. Friday, 11 a. m.

Malayo-Polynesian Philology

33. Malay.

Dr. BLAKE. Thursday, 10 a. m.

34. Elementary Tagalog.

Dr. BLAKE. Friday, 5 p. m.

35. Tagalog (Advanced Course).

Dr. BLAKE. Friday, 4 p. m.

36. Visayan.

Dr. BLAKE. Wednesday, 4 p. m.

SANSKRIT AND COMPARATIVE PHILOLOGY

The following courses, in charge of Professor BLOOMFIELD, may be stated under three heads :

A. Indo-Aryan Philology.

1. Vedic Seminary : a). The Atharva-Veda, with a critical view of recent publications on the subject.

Weekly, first half-year.

2. Vedic Seminary : b). Prose of the Vedas (Brâhmaṇa and Sūtra).

Weekly, second half-year.

3. The elements of Vedic Philology : Vedic grammar, metres, and interpretation of selected hymns.

Weekly, second half-year.

4. Selections from the Hitopadeṣa, Kathāsaritsagara, and the law-book of Manu (second year's course in classical Sanskrit).

Twice a week, first half-year.

5. Beginners' course in Sanskrit : grammar (Whitney's Sanskrit Grammar) and interpretation of an easy text (Lanman's Reader).

Twice a week, through the year.

B. Other Indo-European Languages.

6. Introduction to the language and literature of the Avesta, the sacred literature of the Persian (Jackson's Avesta Grammar and Reader).

Weekly, through the year.

7. Lithuanian Grammar and selected readings.

Weekly through the year.

C. *The Science of Language, and Comparative Grammar of the Indo-European Languages.*

8. The elements of Linguistic Science, with an introductory account of the Ethnology of the Indo-European peoples.

Weekly, through the year.

9. Comparative Grammar of Greek, Latin, German, and Sanskrit : The history of Indo-European Noun-formation.

Weekly, through the year.

No knowledge of Sanskrit is required for courses 5, 7, 8, 9. Course 8 sketches briefly the history of the science of language; presents an outline of the ethnology and religions of the Indo European (Aryan) peoples; deals with the principles that underlie growth and change in language; and finally treats the origin of language. Course 9 is intended as an introduction into the most elementary methods and results of the comparative grammar of the more important Indo-European languages.

ENGLISH

A

Professor BRIGHT will conduct the following courses :

I

English Seminary

Graduate students are admitted to the Seminary as soon as they have satisfied initial requirements for independent research. The discipline of the Seminary is designed to impart training in scholarly methods of dealing with literary and linguistic problems. Study and investigation are bestowed upon selected periods of literary history, upon departments of literature extending through successive periods, and upon the works of important writers, separately or in groups. Usually there is a change of subject each half-year.

In the academic year 1903-1904, the Seminary will be engaged in the study and investigation of the following subjects: (a) The Elizabethan Drama (upon the basis of selected plays), *first half-year*;—(b) Epic Poetry (*Beowulf*, *Genesis*, *Paradise Lost*), *second half-year*.

The meetings of the Seminary will occupy four hours a week. *Tuesday and Thursday, 3-5 p. m.*

II

Modern Poets and the Principles of Literary Criticism. *Monday, 11 a. m., first half-year.*

III

Lectures on the History of English Versification. *Tuesday, 12 m., first half-year.*

IV

Lectures and Conferences on Historical English Grammar (Middle and Modern Periods). *Thursday, 12 m., first half-year.*

V

Lectures and Conferences on a Survey of the Early Periods of English Literature (from Cædmon to Spenser). *Tuesday and Thursday, 12 m., second half-year.*

VI

The English Journal Club (*fortnightly, two hours*), for reports on the current journals, reviews of new books, and the presentation and discussion of original papers on linguistic and literary subjects.

VII

An introductory course in Anglo-Saxon, with Bright's Anglo-Saxon Reader as the text-book. *Monday and Wednesday, 12 m.*

B

Professor BROWNE will give the following courses in English Literature :

VIII

A general course covering the whole field, from the 7th to the 19th century. The study, of course, is synoptical; but emphasis is laid upon the chief writers and most important periods. Arnold's Manual of English Literature is used as a text book. *Wednesday and Thursday, 1 p. m.*

IX

A course in the writers of the 12th, 13th, and 14th centuries (from the Peterborough Chronicle to Chaucer). The texts are read from Morris and Skeat's *Specimens*, the students beginning with the easier and proceeding to the more difficult. In addition to the knowledge thus acquired of an interesting and formative period of our literature, this introduction to the early forms of the language will be found a helpful introduction to the study of Anglo-Saxon. *Monday and Tuesday, 1 p. m.*

X

A course in the writers of the Elizabethan period. The origin and development of the English drama will be traced from its earliest recorded beginnings down to Shakespeare, the representative of its highest perfection, and its decadence in the later Jacobean dramatists. *Tuesday, 12 m., first half-year.*

XI

A course in the literature of the eighteenth century. *Tuesday, 12 m., second half-year.*

XII

The Early Scottish Poetry from Barbour (A. D. 1350) to Lyndsay (A. D. 1550) will be studied by the aid of a chrestomathy especially prepared for this class. A course of historical and critical lectures will be given concurrently with the readings. *Friday, 12 m.*

XIII

A course of lectures for advanced students on the Gawayn Romances. *Monday, 11 a. m., second half-year.*

XIV

A course of lectures for advanced students on Scottish Poetry, ancient and modern. *Tuesday, 11 a. m.*

C

Professor GREENE will give the following courses in Rhetoric and in English Literature:

XV

Rhetoric and English Composition. Theory, based upon textbooks, lectures, and discussions; critical study of prose writers; frequent practice in writing. *Monday, Tuesday, and Wednesday, 12 m.*

XVI

English Literature. Outline history, with special study of the more important writers. *Monday, 9 a. m., Tuesday, 10 a. m., Wednesday, 11 a. m.*

XVII

The study of two contrasted periods:—(a) From the Restoration to the death of Pope (1660–1744); the work will centre upon the writings of Dryden, Steele, Addison, Swift, and Pope. (b) From the publication of the *Lyrical Ballads* to the death of Coleridge (1798–1834); the work will centre upon the writings of Wordsworth, Coleridge, Keats, Shelley, and Byron. *Twice weekly.*

NOTE.—Courses I–VI, XIII and XIV are for graduate students.

Courses VIII and IX constitute the "English Minor;" and VII, X, XI and XII the "English Major" of Group VII.

Course XV is prescribed for all college students during their first year; XVI is prescribed for the second year; and XVII is elective in the third year.

GERMAN

German Seminary

The German Seminary will be conducted by Professor WOOD. The subject for the first half-year will be Goethe's *Faust*. In the study of the First Part, beginning with the *Urfaust*, the questions of conception and composition of the drama will be considered, in chronological order, from the point of view of Goethe's mind and art. The Second Part will be interpreted in selected portions, and Goethe's drafts of particular scenes and of the uncompleted plot will be considered, together with the *Paralipomena*. During the second half-year, the Courtly Lyrics of the twelfth and thirteenth centuries (the *Minnesang*) will be studied.

Students are requested to procure *Goethes Faust*, The First Part, edited by Calvin Thomas, 2 ed., Boston, 1898; *Goethes Faust, I. Teil*, hrsg. von O. Pniower, Berlin; *Goethes Faust in ursprünglicher Gestalt*, hrsg. von E. Schmidt, 5. Abdruck, Weimar, 1902; Fr. Strehlke, *Paralipomena zu Goethes Faust*, Stuttgart, 1891; *Minnesangs Frühling*, hrsg. von Lachmann und Haupt, 4. Auflage, Leipzig, 1888.

The Germanic Society, which is composed of the Director of the Seminary, the instructors, and the graduate students in

German, will meet fortnightly on Friday, 4 to 6 p. m. The members will report upon the contents of current journals, and present, in turn, papers upon subjects connected with the work of the year, or assigned for investigation.

Graduate Courses

Professor WOOD will conduct the following courses:

1. Gothic and the Elements of Comparative German Grammar. *Twice weekly, through the year.*

Braune, *Gotische Grammatik*, 5. Auflage, Halle, 1900; Kluge, *Vorgeschichte der altgermanischen Dialekte* (Sonderabdruck aus der 2. Auflage von Paul's Grundriss der germanischen Philologie), Strassburg, 1897; Heyne's *Ulfilas*, 9. Auflage, von F. Wrede, Paderborn, 1896; Kluge, *Etymologisches Wörterbuch der deutschen Sprache*, 6. Auflage, 1899.

2. Old High German. *Twice weekly, first half-year.*

Students should be provided with Braune, *Althochdeutsche Grammatik*, 2. Auflage, 1891; Braune, *Althochdeutsches Lesebuch*, 4. Auflage, 1897; Kögel und Bruckner, *Geschichte der althoch- und altniederdeutschen Literatur*, Strassburg, 1901.

This course presupposes some knowledge of Old High German. Poems of the newer, or rhymed type (*Otfried*, *Ludwigslied*, etc.) and prose monuments in the chief dialects of Old High German will be studied.

3. The Beginnings of Modern German Classicism. *Twice weekly, second half-year.*

The period in German Literature from 1750 to Goethe's *Italian Journey* (1786) will be studied. The authors to receive the chief share of attention will be Wieland, Klopstock, Lessing, and Herder.

Associate Professor VOS will give the following courses:

4. Middle High German. Introductory Course. *Twice weekly, first half-year.*

Paul, *Mittelhochdeutsche Grammatik*, 5. Auflage, Halle, 1900; Bachmann, *Mittelhochdeutsches Lesebuch*, 2. Auflage, Zürich, 1898; Lexer, *Mittelhochdeutsches Taschenwörterbuch*.

5. Gottfried von Strassburg and his place among the Middle High German Epic Poets. *Twice weekly, first half-year.*

Students should procure Bechstein's edition of *Tristan* (*Deutsche Klassiker des Mittelalters*), 3. Auflage, Leipzig, 1891.

6. History of the German Language. *Twice weekly, second half-year.*

Behaghel, *Geschichte der deutschen Sprache*, Sonderabdruck aus der zweiten Auflage von Paul's Grundriss der germanischen Philologie, Strassburg, 1902.

Dr. T. S. BAKER, Professor of German in the Jacob Tome Institute, will give the following course:

7. Contemporary German Literature. Lectures. *Weekly, through the year.*

Undergraduate Courses

For Candidates for Matriculation

Elementary German:

Vos, *Essentials of German*; Vos, *Materials for German Conversation*; Storm, *Immensee*; Gerstücker, *Germelshausen*.

Three hours weekly, through the year. Associate Professor Vos.

This course is intended for students who offer Greek for matriculation. After completing it, they are required to take Minor A in their groups.

Minor Course

Class A:

Prose Readings: Baumbach, *Erzählungen und Märchen*; Seidel, *Erzählungen*.

Classics: Schiller, *Maria Stuart*; Goethe, *Hermann und Dorothea*. *Three hours weekly, through the year.* Associate Professor Vos.

Prose Composition.

Weekly, through the year. Professor WOOD.

Private Reading: Sudermann, *Frau Sorge* (ed. Gruener).

Class B:

Vos, *Essentials of German*; Gerstäcker, *Germelshausen*; Keller, *Kleider machen Leute*; Wilhelmi, *Einer muss heiraten*; von Wildenbruch, *Das edle Blut*; Prose Composition (E. S. Buchheim, *Elementary German Prose Composition*, Oxford, 1893); Whitney, *German Grammar*.

Four hours weekly, through the year. Dr. KURRELMMEYER.

Minor Course B is intended only for students who have matriculated in Greek, and have fully met at entrance the matriculation requirements; for such students, it absolves the requirements in German. Other students must absolve Minor A.

Major Course

Drama: Goethe, *Faust*; Schiller, *Wallensteins Lager*, *Piccolomini*.
Two hours weekly, through the year. Professor WOOD.

History of German Literature: Classical Period. Selected Poems.
Robertson, *History of German Literature*, New York, 1902; von Klenze, *Deutsche Gedichte*.

Weekly, through the year. Associate Professor Vos.

Prose Composition.

C. A. Buchheim, *Materials for German Prose Composition*, Parts I and II, London, 1894.

Weekly, through the year. Professor WOOD and Mr. HOFMANN.

Private Reading: Schiller, *Wallensteins Tod*.

Elective Courses

[Attention is called to the fact that Special Course No. 2 may also be taken as an elective.]

1. Contemporary Literature, in Rapid Readings.

Works by Hauptmann, Sudermann, von Ebner-Eschenbach, and von Wildenbruch are read.

Two hours weekly, through the year. Dr. KURRELMMEYER.

This course is intended for students who have completed the equivalent of a minor.

2. German Ballads.

Buchheim, *Balladen und Romanzen*, London, 1891.

Two hours weekly, through the year. Associate Professor Vos.

This course is intended primarily for students who have completed the major course.

Special Courses

Courses 1 and 2 are open to graduate students who already possess an elementary knowledge of German and wish to acquire greater fluency in reading. The first is intended for students in languages, history, and economics; the second, for students in the natural sciences. Successful completion of either course is accepted as an equivalent of the reading knowledge of German required of candidates for the degree of Doctor of Philosophy.

1. Historical Readings.

Kron, *German Daily Life*; Schoenfeld, *German Historical Prose*; Seiler, *Die Heimat der Indogermanen*.

Two hours weekly, through the year. Dr. KURRELMMEYER.

2. Scientific German.

Dippold, *Scientific German Reader*; von Helmholtz, *Über Goethe's naturwissenschaftliche Arbeiten*; Cohn, *Über Bakterien*.

Two hours weekly, through the year. Dr. KURRELMMEYER.

This course is open also to undergraduate students who have completed the equivalent of a Minor in German.

3. Oral Exercises in German.

Two hours weekly, through the year. Mr. HOFMANN.

This course is intended especially for students in the departments of modern languages who lack an extended vocabulary and sufficient familiarity with written and spoken German. A thorough knowledge of the elements is presupposed.

ROMANCE LANGUAGES

Advanced Courses

FRENCH

- (a) Old French Literature: Marie de France; Work on Manuscripts. Seminary. Professor ELLIOTT. *Two hours fortnightly*.
- (b) Modern French Literature: The French Theatre in the Nineteenth Century. Seminary. Associate Professor OGDEN. *Two hours fortnightly*.
- (c) The Tragedy in the Sixteenth Century, and the Development of the Classic Drama. Associate Professor OGDEN. *Weekly*.
- (d) The Evolution of Lyric Poetry from the Renaissance. Associate Professor OGDEN. *Weekly*.
- (e) The Arthurian Epic. Professor WARREN. Twenty lectures, December and January.
- (f) The Mediæval Drama. Professor WARREN. Six lectures, December and January.
- (g) French Classics. Dr. BRUSH. *Monthly*.
- (h) Readings in Old French Literature. Marie de France. Professor ELLIOTT. *Weekly*.
- (i) Readings in Old French Literature. *Class A*. The Arthurian Romances and Mediæval Drama. Dr. BRUSH. *Weekly*.
- (j) French Syntax. Associate Professor ARMSTRONG. *Two hours weekly*.
- (k) French Phonology and Morphology. Associate Professor ARMSTRONG. *Three hours weekly*.
- (l) Readings in Old French Literature. *Class B*. Associate Professor ARMSTRONG. *Weekly*.
- (m) Physiological Phonetics. Associate Professor ARMSTRONG. *Weekly*.
- (n) French Dialects. Professor ELLIOTT. *Weekly*.

SPANISH

- (o) Old Spanish Literature: *Libre de Apolonio*. Seminary. Associate Professor MARDEN. *Weekly*.
- (p) The Spanish Drama of the Seventeenth Century. Associate Professor MARDEN. *Two hours weekly*.
- (q) Readings in Old Spanish Literature. Associate Professor MARDEN. *Weekly*.
- (r) Spanish Historical Grammar. Associate Professor MARDEN. *Two hours weekly*.

ITALIAN

- (s) The Earliest Monuments of the Literature. Seminary. Dr. SHAW. Two hours weekly.
- (t) The Prose Literature of the Thirteenth and the First Half of the Fourteenth Centuries. Dr. SHAW. Weekly.
- (u) Readings in Dante: La Divina Commedia. Dr. SHAW. Weekly.
- (v) Dante: La Divina Commedia. Professor ELLIOTT. Weekly.

- (w) Readings in Old Provençal Literature. Associate Professor OGDEN. Weekly.
- (x) Methodology of the Romance Languages. Dr. KEIDEL. Weekly.
- (y) Popular Latin. Professor ELLIOTT. Weekly.
- (z) Romance Club. Weekly.

Undergraduate Courses

FRENCH

For Candidates for Matriculation

Fraser and Squair: *French Grammar, Part I, and Reader*; Verne: *Vingt Mille Lieues sous les Mers*; Labiche: *Le Voyage de M. Perrieron*; About: *La Mère de la Marquise*; Coppée: *On rend l'Argent*.
Three hours weekly, through the year. Dr. BRUSH.

Minor Course

Class A:

- 1. Translation.
 - (a) The Modern Period. Dumas: *Les Trois Mousquetaires*; Augier: *Le Fils de Giboyer*; Daudet: *Contes*; Pailleron: *Le Monde où l'on s'ennuie*; Balzac: *Scènes de la Comédie Humaine*; Bowen's *Modern French Lyrics*.
 - (b) Masterpieces of the Drama. Corneille: *Le Cid*; Racine: *Andromaque*; Molière: *Les Précieuses ridicules, L'Avare*; Hugo: *Ruy Blas*.
- 2. Private Reading. Taine: *Les Origines de la France contemporaine*; Daudet: *La Belle Nivernaise*; Voltaire: *Le Siècle de Louis XIV*.
- 3. Outlines of French Literature.
- 4. Grammar and Composition. Fraser and Squair: *French Grammar*; Kimball: *Exercises based on La Belle Nivernaise*.
Four hours weekly, through the year. Dr. BRUSH.

Class B:

Fraser and Squair: *French Grammar and Reader*; Dumas: *L'Évasion du Duc de Beaufort*; Labiche and Martin: *La Poudre aux Yeux*; La Brète: *Mon Oncle et mon Curé*; Augier and Sandeau: *Le Gendre de M. Poirier*; Balzac: *Eugénie Grandet*.
Four hours weekly, through the year. Associate Professor OGDEN.

Minor Course B is intended only for students who have matriculated in Greek, and have fully met at entrance the matriculation requirements; for such students, it absolves the requirements in French. Other students must absolve Minor Course A.

Major Course

- 1. Translation.
 - (a) The Nineteenth Century. Hugo: *La Chute*; De Musset: *Comédies*; Gautier: *Jettatura*; Zola: *Selections*; France: *L'Orme du Mail*; Rostand: *Les Romanesques*; Canfield's *French Lyrics*; Fortier's *Histoire de France*.
 - (b) French Classics. Corneille: *Ciana*; Racine: *Phèdre*; Molière: *Les Femmes savantes, Le Médecin malgré lui, Le Tartuffe*; Warren's *French Prose of the Seventeenth Century*; Voltaire: *Candide*; Ronsseau: *Selections*.
Part of the above work will be done as Private Reading.
- 2. Lectures on French Literature and on life in France during the seventeenth century.
- 3. Composition. Grandgent's *French Prose Composition*.
Four hours weekly, through the year. Dr. BRUSH.

Elective Course

Lesage: *Gil Blas*; Daudet: *Jack*; George Sand: *La Mare au Diable*; Balzac: *Eugénie Grandet*; France: *Le Crime de Sylvestre Bonnard*.
Weekly practice in composition.
Two hours weekly, through the year. Associate Professor ARMSTRONG.
This course is for students who have completed the equivalent of a minor course.

SPANISH

Minor Course

Ramsey: *Spanish Grammar*; Prose Composition; Alarcón: *El Capitán Veneno*; Tamayo: *Un drama nuevo*; Galdós: *Marianela*; Cervantes: *Don Quijote*; Tirso: *Don Gil de las calzas verdes*.
History of Spanish Literature. Clark: *Spanish Literature*.
Four hours weekly, through the year. Associate Professor MARDEN.
This course is adapted to beginners.

Elective Course

Edgren: *Spanish Grammar*; Matzke: *Spanish Reader*; Palacio Valdés: *José*.
Two hours weekly, through the year. Associate Professor MARDEN.
This course is adapted to beginners.

ITALIAN

Minor Course

Grandgent: *Italian Grammar and Italian Composition*; De Marchi: *Demetrio Pianelli*; Serao: *All' Ertu Sentinella*; Goldoni: *Il Vero Amico*; Ariosto: *Orlando Furioso* (selections); Boccaccio: *Decameron* (selections); Dante: *Inferno* (selections).
Italian Literature. Garnett: *Italian Literature*.
Four hours weekly, through the year. Dr. SHAW.
This course is adapted to beginners.

Elective Course

Fogazzaro: *Daniele Cortis*; Manzoni: *I Promessi Sposi*; Dante: *Inferno* (selections).
Two hours weekly, through the year. Dr. SHAW.
This course is adapted to beginners.

POLITICAL ECONOMY

Graduate Courses

The courses in Political Economy are directed by Associate Professor HOLLANDER, assisted by Dr. BARNETT. He will meet students daily, in seminary organization, for formal instruction and for co-operative investigation. The courses are designed to afford systematic instruction in general economic principles, intelligent acquaintance with special fields of economic science, and, most important of all, knowledge of and ability to employ sound methods of economic research.

Associate Professor HOLLANDER will conduct the following courses:

1. The Economic Seminary.

Two hours weekly, through the year.

The work of the year will continue to be a systematic study of the history, structure, and activities of Labor Organizations in the United States. The material resources necessary for such an inquiry have been made available by a special gift, and certain phases of the general subject are now under investigation. The primary activity of the Seminary is the collection of trade-union documents and the preparation of a bibliography, as complete as may be possible, relating to the labor question in the United States. In addition thereto, individual members are assigned specific topics within the larger field for study and report. In each of such cases the immediate environment is first studied; thereafter examination is made of conditions in other typical communities until sufficient data for reasonably safe generalizations are obtained. Such members of the Seminary as show particular interest in, or special qualification for investigation in other fields than that selected for Seminary study, are encouraged to institute inquiries and to present results for criticism as to method and content.

2. The History and Theory of Distribution.

Two hours weekly, through the year.

During the first half-year, a careful historical survey will be made of the emergence of the theory of Distribution, with particular reference to the physiocratic and socialistic writers. During the second half-year, attention will be paid to the distinctive features of the modern distributive process and a positive theory will be outlined. Representative texts will be assigned for reading and study.

3. The Theory and Practice of Taxation.

Two hours weekly, through the year.

During the first half-year critical study will be made of the history and theory of Taxation. During the second half-year the financial technique of the federal, state, and local governments of the United States will be discussed. In connection with the course, exercise will be afforded in the use of original sources of financial information.

Dr. G. E. BARNETT, Instructor in Political Economy, will offer the following course:

The Theory and History of Banking.

One hour weekly, through the year.

During the first half-year, attention will be given to the theory of banking. During the second half-year, the history of American banking systems will be considered.

Dr. JEFFREY R. BRACKETT, President of the Board of Supervisors of City Charities, will give during the second half-year a course of lectures on Public Aid, Charities, and Correction. He will present a general view of these subjects as illustrated by legislation and custom in the United States and will review the lives of certain persons who have stood for the highest development of thought and work in the field of charity and correction.

While primarily designed, as has been noted, for the needs of students preparing for a scientific career in the field of Political Economy, the instruction offered above will be found of material service to persons looking forward to practical social work, or proposing to enter the public service, the professions of law or journalism, or desirous of equipping themselves for a large and generous citizenship. With this in view, particular attention is paid to recent industrial and financial developments in the United States. Proximity to Washington offers special facilities for study and investigation in these directions, and efforts are made to profit by close acquaintance with and by actual use of the opportunities there existing.

Undergraduate Courses

Associate Professor HOLLANDER and Dr. BARNETT will conduct the following courses:

1. Minor Course:

Four hours weekly, through the year.

(a) Economic History.

(b) Elements of Economics.

2. Major Course:

Four hours weekly, through the year.

(a) Theory of Political Economy.

(b) Modern Economic Institutions.

This course may be taken in place of the course in Political Science in Group VI, (English and American Constitutional History), and as a regular major course. Either section may also be taken as a two-hour course in substitution for a corresponding section of the course in Political Science, or as an elective.

3. Economics. [Part of History-Economics Course.]

Two hours weekly, through the year.

(a) Elements of Economics.

(b) Applied Economics.

HISTORY AND POLITICAL SCIENCE

History

GRADUATE COURSES

Associate Professor JOHN MARTIN VINCENT will conduct the following courses:

Early Modern Europe.

1. The Period of the French Revolution.

Two hours weekly, first half-year.

2. Europe. Early 19th Century.

Two hours weekly, second half-year.

3. Historical Research.

Two hours weekly, first half-year.

4. History of Historical Writing.

Two hours weekly, second half-year.

5. Historical Seminary.

This is a conference for the study of practical problems in historical investigation. Systematic topics in connection with the class lectures are assigned to advanced students for research, and the results are subjected to mutual criticism for the purpose of developing historical judgment.

One hour weekly, through the year.

Historical and Political Science Association.

This association affords additional opportunity for the discussion of original papers by instructors, advanced students, and invited speakers. It is intended to bring forward only the most advanced research in history, politics, and economics.

Alternate Friday evenings.

Dr. BERNARD C. STEINER, Associate in History, will act as one of the advisers of advanced students in their original investigations in American History.

Dr. J. C. BALLAGH, Associate in History, will act as one of the advisers of graduate students and will conduct the following courses:

1. United States, 1789-1860.

Two hours weekly, through the year.

2. History of American Slavery.

One hour weekly, through the year.

3. Examinations in History.

One hour weekly, through the year.

Systematic review of sources in special fields of historical study. In 1903-4 particular attention will be given to the diplomatic history of the American Revolution.

Dr. JAMES SCHOULER, of Boston, will give a short course of lectures, in the spring of 1904, on the life of the people during the American Revolution. This will be in continuation of his course in 1903, and will be open to the entire university and the general public.

The ALBERT SHAW LECTURES on Diplomatic History will be continued as heretofore. The lecturer for 1903-04 will be Professor John W. Perrin, of Western Reserve University, on the "Diplomatic Relations of the United States during the administration of Thomas Jefferson." *October-November.*

Dr. E. L. STEVENSON, Professor of History in Rutgers College, will give a course of six lectures on the "History of Cartography from earliest times through the period of Discovery and Exploration in America."

ORIENTAL HISTORY. Students in the historical group may also avail themselves of the lectures by Professor Bloomfield, of the department of Sanskrit and Comparative Philology, on the ethnological history of the Indo-European peoples; also the courses of Dr. Christopher Johnson, of the Oriental Seminary, on the history of the Ancient East.

PALÆOGRAPHY. Courses in Ancient and Mediæval Palæography are conducted in the respective philological departments and are open to historical students.

UNDERGRADUATE COURSES

Associate Professor VINCENT:

European History.

Two hours weekly, through the year. (Part of "Major History.")

Dr. STEINER:

1. American Political and Constitutional History.

Two hours weekly, through the year. (Part of "Major Politics.")

2. Historical Politics.

Two hours weekly, through the year. This is intended for undergraduates not following Group VI. (Part of "History-Economics.")

Dr. BALLAGH:

1. Classical History.

Four hours weekly, through the year. (Minor History.)

2. Civilization and Politics in the Far East.

Two hours weekly, through the year. (Part of "Major History.")

Dr. GUY CARLETON LEE:

1. English Political and Constitutional History.

Two hours weekly, through the year. (Part of "Major Politics.")

2. Introduction to the Study of Law.

One hour weekly, through the year. For college seniors.

3. Public Speaking and Class Debates.

Six hours weekly, through the year.

Political Science

GRADUATE COURSES

The graduate work in Political Science is under the direction of Associate Professor W. W. WILLOUGHBY and is so arranged as to give three years' continuous instruction. The courses offered for the year 1903-04 are as follows:

1. Historical and Political Science Association.

Fortnightly, throughout the year.

In coöperation with the departments of History and Political Economy. Original papers by instructors, advanced students, and invited speakers are presented, and the more important current publications in history, politics, and economics reviewed.

2. Political Science Seminary.

Fortnightly, throughout the year.

Original papers prepared by the students will be read and discussed. Topics in International Law and Colonial Government will be especially considered.

3. Advanced American Constitutional Law.

Two hours weekly, throughout the year.

For this course a general knowledge of the political history and constitutional law of the United States is presupposed. The lectures will be devoted to a discussion of the more perplexing and still unsettled points in American constitutional jurisprudence, the illustrations being largely drawn from recent and current decisions of the U. S. Supreme Court.

4. History of Political Theories and Literature from the beginning of the Fifteenth to the close of the Eighteenth Century.

Two hours weekly, throughout the year.

The political ideas and ideals of these years as revealed not only in their literature, but in law and political practice, will be analyzed and criticized. Special effort will be made to show the extent to which these theories were the product of the general intellectual and objective political conditions of the times in which they were formulated.

5. Current Political Problems and Literature.

One hour weekly, throughout the year.

By means of short reports and reviews the students will be kept in touch with current political questions and periodical literature.

PHILOSOPHY

The undergraduate courses in Philosophy provide five hours of work per week for one year, under the direction of Professor GRIFFIN. All candidates for the degree of Bachelor of Arts are required to follow them during the last year of residence.

1. Deductive and Inductive Logic.

The logical forms—terms, propositions, syllogisms—are studied as an analysis or explanation of the thinking process and as a practical discipline in exact thought: attention is given also to the material elements in inference as these are stated in the several inductive methods.

Creighton's Introductory Logic is used as a text book, with references to the works of Jevons, Mill, Bain, Keynes, and other writers.

Four hours weekly, until Christmas.

2. Psychology.

The instruction in psychology is intended to give a general view of the results of the present methods of study, the investigation in regard to the quality and intensity of sensations, the duration of psychic acts, etc.—in general, the subjects treated in Part II of Ladd's Physiological Psychology—being presented with sufficient detail to render them intelligible and interesting. A series of lectures and demonstrations on the anatomy and physiology of the nervous system, by Dr. C. R. Bardeen, is included in the course.

Especial emphasis is laid upon the facts of conscious experience as known through introspection, the most important end to be secured being, it is believed, such an understanding of the facts and laws of mental life as shall fit one for wise self-government and effective influence. With this view, such powers and states of mind as attention, memory, association, habit, imagination, the feelings, the will, are discussed in as concrete and practical a way as possible. A text book is used as a basis of instruction, but this is largely supplemented by informal lectures, and by references to various authorities.

Baldwin's Elements of Psychology, Sully's Human Mind, James's Psychology, Höfding's Outlines of Psychology, Titchener's An Outline of Psychology, Stout's Manual of Psychology, Porter's Human Intellect, Spencer's Principles of Psychology, Ladd's Outlines of Physiological Psychology, are used as books of reference. One essay on an assigned subject is required from each member of the class.

Four hours weekly, during January; five hours from February 1 to April 1.

3. Ethics.

Ethics is treated with reference to its fundamental problems as a theoretical science, and also from a practical point of view. Its psychological basis in the various forms of feeling native to our constitution, and in the power of rational self-determination; the nature of the sense of obligation; the authority of conscience; the diversities of moral opinion; the historic theories of morals—hedonism, utilitarianism, intuitionism, and the application to the ethical theory of the doctrine of evolution;—these are some of the topics discussed.

Mackenzie's Manual of Ethics is employed as a text-book, but the instruction is given, to a considerable extent, through lectures. One essay is required from each member of the class.

Five hours weekly, after April 1.

4. History of Philosophy.

Outline of Greek Philosophy.

Weekly, first half-year.

Outline of Modern Philosophy. [Optional Course.]

Weekly, second half-year.

For next year, the following advanced courses in Philosophy are offered:

1. Modern Philosophy from Descartes to Kant.

Weekly, through the year.

2. Modern Ethical Theories.

Fortnightly,

MEDICAL DEPARTMENT.

The Annual Catalogue and Announcement will be sent on application; also announcements of the courses for graduates in medicine.

STAFF.

	F. P. MALL, M. D., Professor. R. G. HARRISON, PH. D., M. D., Associate Professor. C. R. BARDEEN, M. D., Associate Professor.
Anatomy	W. H. LEWIS, M. D., Associate. H. McE. KNOWER, PH. D., Instructor. F. R. SABIN, M. D., Instructor. B. D. MYERS, M. D., Instructor. AUGUSTUS POHLMAN, M. D., Assistant.
Physiology	W. H. HOWELL, PH. D., M. D., Professor. P. M. DAWSON, M. D., Associate. JOSEPH ERLANGER, M. D., Associate. E. G. MARTIN, PH. B., Assistant.
Physiological Chemistry.....	J. J. ABEL, M. D., Professor. WALTER JONES, PH. D., Associate Professor. A. S. LOEVENHART, M. D., Assistant.
Pharmacology and Toxicology.....	J. J. ABEL, M. D., Professor. REID HUNT, PH. D., M. D., Associate Professor. A. R. L. DOHME, PH. D., Instructor.
Pathology and Bacteriology.....	W. H. WELCH, M. D., LL. D., Professor. W. G. MACCALLUM, M. D., Associate Professor. E. L. OPIE, M. D., Associate. H. T. MARSHALL, M. D., Assistant. C. H. BUNTING, M. D., Assistant.
Medicine.....	WILLIAM OSLER, M. D., LL. D., Professor. W. S. THAYER, M. D., Associate Professor. T. B. FUTCHER, M. B., Associate Professor. F. R. SMITH, M. D., Associate. H. B. JACOBS, M. D., Associate. THOMAS McCRAE, M. D., Associate. C. P. EMERSON, M. D., Associate. L. P. HAMBURGER, M. D., Instructor. T. R. BROWN, M. D., Instructor. H. T. MARSHALL, M. D., Instructor. R. I. COLE, M. D., Instructor. J. H. PLEASANTS, M. D., Assistant. WALTER BAUMGARTEN, M. D., Assistant. A. P. C. HOWARD, M. D., Assistant. J. B. BRIGGS, JR., M. D., Assistant.
Surgery.....	W. S. HALSTED, M. D., Professor. J. M. T. FINNEY, M. D., Associate Professor. J. C. BLOODGOOD, M. D., Associate Professor. HARVEY CUSHING, M. D., Associate Professor. H. H. YOUNG, M. D., Associate. GEORGE WALKER, M. D., Instructor. W. S. BAER, M. D., Instructor. R. H. FOLLIS, JR., M. D., Instructor. N. E. B. IGLEHART, M. D., Assistant.
Gynecology.....	H. A. KELLY, M. D., Professor. W. W. RUSSELL, M. D., Associate Professor. T. S. CULLEN, M. B., Associate Professor. G. L. HUNTER, M. D., Associate. B. R. SCHENCK, M. D., Instructor. ELIZABETH HURDON, M. D., Assistant. J. A. SAMPSON, M. D., Assistant.
Obstetrics.....	J. W. WILLIAMS, M. D., Professor. F. W. LYNCH, M. D., Associate. H. W. BUCKLER, M. D., Assistant. J. M. SLEMONS, M. D., Assistant.
Psychiatry.....	H. M. HURD, M. D., LL. D., Professor. H. J. BERKLEY, M. D., Clinical Professor. STEWART PATON, M. D., Associate. G. Y. RUSK, M. D., Assistant.
Pediatrics.....	W. D. BOOKER, M. D., Clinical Professor. SAMUEL AMBERG, M. D., Associate. J. H. M. KNOX, PH. D., M. D., Assistant. R. A. URQUHART, M. D., Assistant.
Neurology.....	H. M. THOMAS, M. D., Clinical Professor.
Laryngology and Rhinology.....	J. N. MACKENZIE, M. D., Clinical Professor. MACTIER WARFIELD, M. D., Instructor. SYLVAN ROSENHEIM, M. D., Assistant.
Ophthalmology and Otolaryngology.....	SAMUEL THEOBALD, M. D., Clinical Professor. R. L. RANDOLPH, M. D., Associate Professor. H. O. REIK, M. D., Assistant.
Dermatology.....	J. W. LORD, M. D., Clinical Professor. T. C. GILCHRIST, M. R. C. S., Clinical Professor.

DEGREES CONFERRED JUNE 9, 1903.

The public exercises of Commencement were held in the Academy of Music at 4 p. m., Tuesday, June 9, 1903. Degrees were conferred as follows: Bachelor of Arts, forty-six, Doctor of Philosophy, twenty-three, Doctor of Medicine, forty-nine. The honors of the year and the recent appointments were announced by the President (see page 118 of this *Circular*). In the evening a reception to the graduates and their friends was given in McCoy Hall.

DOCTORS OF PHILOSOPHY

LEROY CARR BARRET, of Richmond, Mo., A. B., Washington and Lee University, 1897. *Subjects*: Sanskrit, Latin, and Greek. *Dissertation*: The Kashmirian *Atharva-Veda*, Book I (50 Hymns), edited and translated. *Referees on Dissertation*: Professor Bloomfield and Professor C. R. Lanman of Harvard University.

ELBERT JAY BENTON, of Holton, Kan., A. B., Campbell University, 1895. *Subjects*: History, Politics, and Economics. *Dissertation*: The Wabash Trade Route in the Development of the Old Northwest. *Referees on Dissertation*: Professor Vincent and Dr. Steiner.

GEORGE OLAF BERG, of Sacred Heart, Minn., A. B., St. Olaf College, 1899. *Subjects*: Greek, Latin, and Sanskrit. *Dissertation*: Metaphor and Comparison in the Dialogues of Plato. *Referees on Dissertation*: Professors Gildersleeve and Spieker.

BENJAMIN FRANKLIN CARVER, of Hanover, Pa., S. B., Pennsylvania College, 1900. *Subjects*: Chemistry, Physical Chemistry, and Geology. *Dissertation*: A Study of new Semi-permeable Membranes prepared by the Electrolytic Method. *Referees on Dissertation*: Professors Morse and H. C. Jones.

HENRY AUGUSTUS CONVERSE, of Harrisonburg, Va., A. B., Hampden-Sidney College, 1893. *Subjects*: Mathematics, Physics, and History of Philosophy. *Dissertation*: On a System of Hypocycloids of Class Three inscribed to a given 3-line and some Curves connected with it. *Referees on Dissertation*: Professor Morley and Dr. Cohen.

JOHN P. COONY, of St. Louis, Mo., Woodstock College. *Subjects*: Chemistry, Physical Chemistry, and Geology. *Dissertation*: A Study of Some new Semi-permeable Membranes. *Referees on Dissertation*: Professors Morse and H. C. Jones.

FRANK LINLEY CRITCHLOW, of East Northfield, Mass., A. B., Princeton University, 1896. *Subjects*: French, Spanish, and History of Philosophy. *Dissertation*: *Françailles* and *Epousailles* as represented in the *Romans d'Aventures* of Old French Literature. *Referees on Dissertation*: Professors Elliott and Ogden.

CHARLES KEYSER EDMUNDS, of Baltimore, A. B., Johns Hopkins University, 1897. *Subjects*: Physics, Mathematics, and Electricity. *Dissertation*: Some Optical Properties of Selenium: A. Metallic Reflection Phenomena; B. Reflecting Power. *Referees on Dissertation*: Professors Ames and R. W. Wood.

PHILIP HOWARD EDWARDS, of Baltimore County, Md., A. B., St. John's College, 1898. *Subjects*: Latin, Greek, and Sanskrit. *Dissertation*: The Poetic Element in the Satires and Epistles of Horace. *Referees on Dissertation*: Professors Smith and Wilson.

WILLIAM ELFORD GOULD, of Baltimore, A. B., Columbia University, 1879. *Subjects*: Spanish, French, and History. *Dissertation*: The Subjunctive Mood in *Don Quijote de la Mancha*. *Referees on Dissertation*: Professors Elliott and Marden.

PHILIP WARNER HARRY, of Harford County, Md., A. B., Johns Hopkins University, 1898. *Subjects*: French, Spanish, and History. *Dissertation*: A Comparative Study of the Aesopic Fable in Nicole Bozon. *Referees on Dissertation*: Professor Elliott and Dr. Keidel.

YUKIMASA HATTORI, of Sagaken, Japan, Tokyo College of Science, 1898. *Subjects*: Political Economy, Political Science, and History. *Dissertation*: The Foreign Commerce of Japan since the Restoration. *Referees on Dissertation*: Professor Hollander and Dr. Barnett.

JOHN GALE HUN, of Albany, N. Y., A. B., Williams College, 1899. *Subjects*: Mathematics, Physics, and History of Philosophy. *Dissertation*: The Invariant Relations of Two Triangles. *Referees on Dissertation*: Professor Morley and Dr. Cohen.

ALBERT JOHANSEN, of Fremont, Neb., S. B., University of Utah, 1898. *Subjects*: Geology, Mineralogy, and Chemistry. *Dissertation*: The Serpentine of Harford County, Maryland. *Referees on Dissertation*: Professors Clark and Mathews.

THOMAS MADISON JONES, of Ashland, Va., A. B., Randolph-Macon College, 1894. *Subjects*: Latin, Greek, and German. *Dissertation*: Case Construction of Similis and its Compounds. *Referees on Dissertation*: Professors Smith and Wilson.

GEORGE WILES MIDDLEKAUFF, of Leitersburg, Md., A. B., Franklin and Marshall College, 1891. *Subjects*: Physics, Mathematics, and Chemistry. *Dissertation*: Measurements of certain Wave-lengths in the Spark-Spectra of Iron and Titanium, together with a Study of the Possible Influence of Capacity and Self-Induction in the Spark Circuit. *Referees on Dissertation*: Professors Ames and R. W. Wood.

JOSEPH HAINES MOORE, of Wilmington, O., A. B., Wilmington College, 1897. *Subjects*: Physics, Mathematics, and Astronomy. *Dissertation*: The Absorption and Fluorescent Spectra of Sodium Vapor. *Referees on Dissertation*: Professors Ames and R. W. Wood.

ALFRED JAMES MORRISON, of Farmville, Va., A. B., Hampden-Sidney College, 1895. *Subjects*: French, Spanish, and German. *Dissertation*: Character-Study in Old French *Romans d'Aventures*: The Heroine. *Referees on Dissertation*: Professors Elliott and Ogden.

ROLAND JESSUP MULFORD, of Friendsville, Pa., A. B., Harvard University, 1893. *Subjects*: Political Science, History, and Political Economy. *Dissertation*: The Political Theories of Alexander Hamilton. *Referees on Dissertation*: Professors Willoughby and Vincent.

JOHN DAVID RODEFFER, of Lovettsville, Va., A. B., Roanoke College, 1895. *Subjects*: English, German, and French. *Dissertation*: The Inflection of the English Present Plural Indicative, with special reference to the Northern Dialect. *Referees on Dissertation*: Professors Bright and Browne.

CHARLES ALBERT SAVAGE, of Minneapolis, Minn., A. B., Johns Hopkins University, 1895. *Subjects*: Greek, Latin, and Sanskrit. *Dissertation*: The Athenian Family: A Legal and Sociological Study based chiefly on the Orators, with illustrations from other departments of Greek Literature. *Referees on Dissertation*: Professors Gildersleeve and Spieker.

ATHERTON SEIDELL, of Atlanta, Ga., S. B., University of Georgia, 1899. *Subjects*: Chemistry, Physical Chemistry, and Mineralogy. *Dissertation*: The Precipitation of Zinc by Manganese Peroxide, with especial reference to the Volhard method of determining Manganese. *Referees on Dissertation*: Professors Morse and H. C. Jones.

ARTHUR WHITMORE SMITH, of Andover, Mass., S. B., New Hampshire College, 1893. *Subjects*: Physics, Physical Chemistry, and Mathematics. *Dissertation*: A Determination of the Heat of Fusion of Ice. *Referees on Dissertation*: Professors Ames and R. W. Wood.

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DOCTORS OF MEDICINE

VICTOR HUGO BASSETT, of Aledo, Ill., A. B., Knox College, 1896.

LEWIS CLYDE BIXLER, of Easton, Pa., A. B., Lafayette College, 1899.

ELISABETH HEDGES BLAUVELT, of Roselle, N. J., A. B., Bryn Mawr College, 1896.

CLINTON ETHELBERG BRUSH, JR., of South Orange, N. J., S. B., New York University, 1899.

JOSEPH ALBERT CHATARD, of Baltimore, A. B., Loyola College, 1898.

GEORGE EDWARD CHINN, JR., of Fayette, Mo., S. B., Central College (Mo.), 1899.

ALFRED HULL CLARK, of Buffalo, N. Y., A. B., Cornell University, 1899.

WILLIAM BURGESS CORNELL, of Chicago, Ill., A. B., University of Chicago, 1899.

EMMA GRACE DEWEY, of Jacksonville, Ill., S. B., Wellesley College, 1885.

HARLAN DUDLEY, of Monroeville, O., Ph. B., Oberlin College, 1897.

DANA LEE EDDY, of Leavenworth, Kan., A. B., Yale University, 1898.

ROADES FAYERWEATHER, of Chicago, Ill., A. B., Harvard University, 1899.

JOHN SOMERVILLE FISCHER, of Baltimore, A. B., Johns Hopkins University, 1898.

FREDERICK JULIUS GAENSLER, of Milwaukee, Wis., S. B., University of Wisconsin, 1899.

LEWIS MCFARLAND GAINES, of Atlanta, Ga., A. B. and S. B., Hampden-Sidney College, 1898.

JOHN TIMOTHY GERAQHTY, of St. Paul, Minn., A. B., St. Thomas College, 1895; Ph. B., St. Paul Seminary, 1897.

FRANCIS COLQUHOUN GOLDSBOROUGH, of Baltimore, S. B., Princeton University, 1899.

JUSTIN FRANK GRANT, of Stamford, Conn., Ph. B., Yale University, 1898.

LOUIS WARDLAW HASKELL, JR., of Savannah, Ga., A. B., Johns Hopkins University, 1899.

ARTHUR DOUGLASS HIRSCHFELDER, of San Francisco, Cal., S. B., University of California, 1897.

ROSS HOPKINS, of Holton, Kan., A. B., Kansas State University, 1899.

HENRY TALBOT HUTCHINS, of Worcester, Mass., A. B., Amherst College, 1899.

CLEMENT LEVI JONES, of Jamestown, O., S. B., Washington and Jefferson College, 1899.

LOUISE TAYLER JONES, of Washington, D. C., A. B., Wellesley College, 1896; M. S., Columbian University, 1898.

ALBERT KEIDEL, of Catonsville, Md., A. B., Johns Hopkins University, 1900.

MAURICE LAZENBY, of Baltimore, A. B., Johns Hopkins University, 1900.

ARTHUR SOLOMON LOEVENHART, of Lexington, Ky., S. B., Kentucky State College, 1898.

HENRY D. LONG, of Greensburg, Pa., A. B., Washington and Jefferson College, 1894.

MARGARET LONG, of Hingham, Mass., A. B., Smith College, 1895.

EDWARD JANNEY SIDWELL LUPTON, of Martinsburg, W. Va., S. B., Columbian University, 1899.

LEO AUGUSTINE LYNCH, of Olyphant, Pa., A. B., Yale University, 1899.

WILLIAM SANDERS MANNING, of Washington, D. C., S. B., Columbian University, 1899.

WATSON MARSHALL, of Pittsburg, Pa., A. B., Princeton University, 1899.

ROBERT TALBOTT MILLER, JR., of Covington, Ky., A. B., Amherst College, 1899.

MARY ELIZABETH MORSE, of Baltimore, A. B., Woman's College of Baltimore, 1899.

WILLIS BEAN MOULTON, of Portland, Me., A. B., Bowdoin College, 1899.

HARRY BENJAMIN NEAGLE, of Lubec, Me., A. B., Bowdoin College, 1899.

SELDEN IRWIN RAINFORTH, of Cincinnati, O., S. B., University of Cincinnati, 1899.

THEODORE FOSTER RIGGS, of Oahe, S. Dak., A. B., Beloit College, 1898.

BENJAMIN FRANKLIN RILEY, JR., of Houston, Tex., S. B., University of Georgia, 1898.

GEORGE CANBY ROBINSON, of Baltimore, A. B., Johns Hopkins University, 1899.

MARVIN PIERCE RUCKER, of Manchester, Va., A. M., Randolph-Macon College, 1899.

FERDINAND SCHMITTER, of Albany, N. Y., A. B., Union College, 1899.

OSCAR THEODORE SCHULTZ, of Mt. Vernon, Ind., A. B., Indiana University, 1897.

WINFORD HENRY SMITH, of Westbrook, Me., A. B., Bowdoin College, 1899.

ALEXANDER RAYMOND STEVENS, of Baltimore, A. B., Johns Hopkins University, 1896.

CATHERINE HUTCHINSON TRAVIS, of Hampton, Canada, A. B., McGill University, 1895.

FRANK HOSFORD WATSON, of Milwaukee, Wis., S. B., University of Wisconsin, 1899.

CHARLES WHITTIER YOUNG, of Chicago, Ill., S. B., University of Illinois, 1897.

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BACHELORS OF ARTS

JOHN ARMSTRONG ADDISON, of Baltimore.

LOUIS ADELSDORF, of Baltimore.

WILLIAM WETHERALL AMMEN, of Baltimore.

HARRY NORMAN BAETJER, of Baltimore.

ARTHUR NEWSOM BALDAUF, of Kentucky.

EDGAR SUTRO BAMBERGER, of Baltimore.

WILLIAM SELLMAN BIRD, of Baltimore.

FREDERICK CONRAD BLANCH, of Baltimore.

SOLOMON BLUM, of Baltimore.

JAMES WALLACE BRYAN, of Baltimore.

JENES CAMERON, of Baltimore.

JAMES BAYARD GREGG CUSTIS, JR., of the District of Columbia.

ALPHONSE RAYMOND VIVIAN DOCHEZ, of Harford County.

THEODORE WESLEY GLOCKER, of Baltimore.

JOHN ALAN HAUGHTON, of Baltimore.

FRANKLIN HAZLEHURST, JR., of Baltimore.

MOSES WALTON HENDRY, of the District of Columbia.

JOHN COFFEY HILDT, of Baltimore.

EBEN CHARLES HILL, of Baltimore.

RICHARD CURZON HOFFMAN, JR., of Baltimore.

STUART CATOR HOPPER, of Baltimore.

ROBERT SAMPSON LANIER, of North Carolina.

CHARLES ALEXANDER MARSHALL, of Baltimore.

BENJAMIN WILCHER MEEKS, of Baltimore.

McHARDY MOWER, of South Carolina.

WILLIAM URWICK MURKLAND, of Baltimore.

JOHN MARBURY NELSON, JR., of Baltimore County.

ROBERT JAMES NICHOLSON, of Baltimore.

ROBINSON CATOR PAGON, of Baltimore.

WILLIAM TURNER PARSONS, of Baltimore.

EUGENE LEO PESSAGNO, of Baltimore.

HARRY WARD PLAGGEMEYER, of Baltimore.

CHARLES WOODWARD RILEY, of Baltimore.

CHARLES ALBERT ROBINSON, JR., of Baltimore.

EDGAR POE SANDROCK, of Baltimore.

JOSEPH TATE SMITH, JR., of Baltimore.

WILTON SNOWDEN, JR., of Baltimore.

PHILIP RAYNER STRAUS, of Baltimore.

GEORGE DRAYTON STRAYER, of Baltimore.

CHARLES HENRY STUBENRAUCH, of Baltimore.

HARRY KING TOOTLE, of Missouri.

GEORGE WILLIAM TOWNSEND, of Baltimore.

JAMES DE LANCEY VER PLANCK, of New York.

HARRY AUGUSTUS WARNER, of Baltimore.

MILTON CHARLES WINTERNITZ, of Baltimore.

ALEXANDER YEARELY, 3d, of Baltimore.

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APPOINTMENTS, PROMOTIONS, AND HONORS ANNOUNCED JUNE 9, 1903.

APPOINTMENTS IN THE PHILOSOPHICAL FACULTY

- MURRAY P. BRUSH, Ph. D., now Instructor, to be Associate in Romance Languages.
 WILLIAM ROSENAU, Ph. D., to be Associate in Post-Biblical Hebrew.
 J. EUSTACE SHAW, Ph. D., now Instructor, to be Associate in Italian.
 LEROY C. BARRET, Ph. D., to be Instructor in Latin.
 HENRY A. CONVERSE, Ph. D., to be Instructor in Mathematics.
 THEODORE C. FOOTE, Ph. D., to be Instructor in Biblical Literature.
 GEORGE C. MARTIN, Ph. D., now Assistant, to be Instructor in Paleontology.
 CHARLES R. MCINNES, A. M. (Queen's University, Ont., 1896), Ph. D. (Johns Hopkins University, 1900), to be Director of the Gymnasium.
 LEE RANEY, A. B., to be Assistant Librarian.
 JOHN D. RODEFFER, Ph. D., to be Assistant in English.
 ARISTOGEITON M. SOHO, Ph. D., to be Lecturer on Modern Greek.

APPOINTMENTS IN THE MEDICAL FACULTY

- JOSEPH C. BLOODGOOD, M. D., now Associate, to be Associate Professor of Surgery.
 HARVEY CUSHING, M. D., now Associate, to be Associate Professor of Surgery.
 SAMUEL AMBERG, M. D., now Instructor, to be Associate in Pediatrics.
 CHARLES P. EMERSON, M. D., now Instructor, to be Associate in Medicine.
 JOSEPH ERLANGER, M. D., now Instructor, to be Associate in Physiology.
 WARREN H. LEWIS, M. D., now Instructor, to be Associate in Anatomy.
 HARRY T. MARSHALL, M. D., to be Instructor in Medicine.
 BURTON D. MYERS, M. D., now Assistant, to be Instructor in Anatomy.
 FLORENCE R. SABIN, M. D., now Assistant, to be Instructor in Anatomy.
 JOHN B. BRIGGS, JR., M. D., to be Assistant in Medicine.
 CHARLES H. BUNTING, M. D., to be Assistant in Pathology.
 A. P. C. HOWARD, M. D., to be Assistant in Medicine.
 ARTHUR S. LOEVENHART, M. D., to be Assistant in Physiological Chemistry.
 ERNEST G. MARTIN, Ph. B., to be Assistant in Physiology.
 AUGUSTUS POHLMAN, M. D., to be Assistant in Anatomy.
 JOHN A. SAMPSON, M. D., to be Assistant in Gynecology.
 J. MORRIS SLEMONS, M. D., to be Assistant in Obstetrics.

FELLOWSHIPS

ADAM T. BRUCE FELLOW IN BIOLOGY

RHEINART PARKER COWLES, of Los Angeles, Cal., A. B., Leland Stanford Jr. University, 1899; Fellow of the Johns Hopkins University, 1901-02.

WILLIAM S. RAYNER FELLOW IN SEMITIC LANGUAGES

GABRIEL OUSSANI, of Bagdad, Turkey, A. B., College of the Propaganda (Rome), 1895; Fellow of the Johns Hopkins University, 1902-03.

FELLOWS, 1903-04

- SAMUEL J. ALLAN, of Montreal, Canada, B.Sc., McGill University, 1900. *Physics*.
 JAMES BARNES, of Halifax, Nova Scotia, A. B., Dalhousie University, 1899. *Physics*.
 DOUGLAS LABAREE BUFFUM, of Charlottesville, Va., A. M., University of Virginia, 1898. *Romance Languages*.
 WALTER BUCKINGHAM CARVER, of Stewartstown, Pa., Ph. B., Dickinson College, 1899. *Mathematics*.
 HOWARD WATERS DOUGHTY, of Baltimore. *Chemistry*.
 AARON EMBER, of Baltimore, A. B., Johns Hopkins University, 1901. *Semitic Languages*.

JOHN CALVIN FRENCH, of Baltimore, A. B., Johns Hopkins University, 1899. *English*.

AUGUST ERNEST GUENTHER, of Sandusky, O., S. B., University of Michigan, 1898. *Physiology*.

ELLIOT SNELL HALL, of Jamestown, N. Y., A. B., Amherst College, 1896. *Chemistry*.

LEE MILTON HOLLANDER, of Baltimore, A. B., Johns Hopkins University, 1901. *German*.

PORTER HOLLIS, of Rock Hill, S. C., A. B., Wofford College, 1895. *History*.

ARTHUR ISAAC KENDALL, of Somerville, Mass., S. B., Massachusetts Institute of Technology, 1900. *Pathology*.

WILLIAM KIRK, of Baltimore, A. B., Johns Hopkins University, 1902. *Political Economy*.

WILFRED GEORGE LEUTNER, of Cleveland, O., A. B., Adelbert College, 1901. *Greek*.

RAYMOND DURBIN MILLER, of Westminster, Md., A. B., Johns Hopkins University, 1898. *English*.

WALTER LEWIS MOLL, of Baltimore, Concordia College (Ind.), 1896. *Greek*.

CHARLES KEPHART SWARTZ, of Baltimore, A. B., Johns Hopkins University, 1888. *Geology*.

DAVID HILT TENNENT, of Janesville, Wis., S. B., Olivet College, 1900. *Zoology*.

BOYD ASHBY WISE, of Canterbury, Va., A. B., Randolph-Macon College, 1897. *Latin*.

JAMES MARTIN WRIGHT, of Norbonne, Mo., A. B., William Jewell College, 1901. *Political Science*.

PRIZES

THE JOHN MARSHALL PRIZE

The John Marshall Prize for the year 1903 has been awarded to JAMES ALBERT WOODBURN, (Ph. D., 1890), in recognition of the value of his recently published works entitled "The American Republic and its Government" and "Political Parties and Party Problems in the United States." This prize consists of a bronze likeness of Chief Justice Marshall, and is awarded annually to a graduate of the University who has produced the best work during the year upon some subject in historical or political science.

THE HENRICO MEDALLION

The Henrico Medallion consists of a copper medallion bas-relief commemorating the foundation of a university at Henrico, in Virginia, in the year 1619. It is given by the Colonial Dames of America, Chapter 1, for bestowal annually upon a graduate or a student of the University not more than ten years after graduation as Bachelor of Arts, who shall have done work of special excellence in early American History.

The prize for the year 1903 is awarded to ELBERT JAY BENTON (Ph. D., 1903), in recognition of his recently-published study entitled "The Wabash Trade Route in the Development of the Old Northwest."

THE TOCQUEVILLE MEDAL

The Tocqueville gold medal is annually given to the Johns Hopkins University by the Baron Pierre de Coubertin, of Paris, in honor of the illustrious Frenchman, Alexis de Tocqueville (1805-1859), and is offered by the University to that student who shall have written the best essay on some subject illustrating any phase of French history, political or social, from 1815-1890, or a review of some important historical work published in France since 1890. For the year 1903 the medal is awarded to HARRY KING TOOTLE (A. B., 1903), for his essay on "Léon Gambetta."

HONORS OF THE MEDICAL STUDENTS

The following are eligible for the position of Resident House Officer of the Johns Hopkins Hospital:

SELDEN IRWIN RAINFORTH.	LEWIS CLYDE BIXLER.
FRANK HOSFORD WATSON.	WILLIS BEAN MOULTON.
ROBERT TALBOTT MILLER, JR.	CATHERINE HUTCHINSON TRAVIS.
CHARLES WHITTIER YOUNG.	HENRY D. LONG.
CLINTON ETHELBERG BRUSH, JR.	HENRY TALBOT HUTCHINS.
VICTOR HUGO BASSETT.	BENJAMIN FRANKLIN RILEY, JR.
ARTHUR DOUGLAS HIRSCHFELDER.	ARTHUR SOLOMON LOEVENHART.
JOHN TIMOTHY GERAGHTY.	THEODORE FOSTER RIGGS.
ALEXANDER RAYMOND STEVENS.	

HOPKINS SCHOLARSHIPS

These scholarships, in accordance with the wishes of the founder, are awarded to candidates from Maryland, Virginia, and North Carolina who are considered to be the "most deserving of choice because of their character and intellectual promise."

TO VIRGINIA AND NORTH CAROLINA STUDENTS

J. E. ALLEN (A. B., Hampden-Sidney, 1898), of Newport News, Va.
 B. W. BOND, JR. (A. B., Randolph-Macon, 1900), of Ashland, Va.
 R. G. CAMPBELL (A. M., Washington and Lee, 1899), of Alexandria, Va.
 O. P. CHITWOOD (A. B., William and Mary, 1899), of Kennett, Va.
 E. P. DARGAN (University of Virginia), of Barboursville, Va.
 A. DODGE (A. B., William and Mary, 1900), of Williamsburg, Va.
 H. W. EARLY (A. B., Wake Forest College, 1895), of Ocracoke, N. C.
 D. B. EASTER (A. B., Randolph-Macon, 1891), of Ashland, Va.
 H. J. ECKENRODE (A. B., Fredericksburg, 1898), of Fredericksburg, Va.
 H. E. FLACK (A. M., Wake Forest, 1901), of Cuha, N. C.
 T. H. FOWLER (A. B., Washington College, Md., 1897), of Oxford, N. C.
 H. M. HAYS (University of Virginia), of Broadway, Va.
 K. E. HENDRICKS (A. B., Guilford College, 1900), of Asheboro, N. C.
 E. J. HOFFMAN (A. B., Davidson, 1900), of Dallas, N. C.
 I. F. LEWIS (S. B., Univ. of North Carolina, 1902), of Chapel Hill, N. C.
 A. H. LICKLIDER (A. B., Randolph-Macon, 1897), of Norfolk, Va.
 R. E. LOVING (A. B., Richmond College, 1896), of Churchland, Va.
 H. MARTIN (A. B., Richmond College, 1899), of Franklin, Va.
 J. F. MESSICK (A. B., Randolph-Macon, 1899), of Front Royal, Va.
 A. W. McWHORTER (A. M., Roanoke College, 1895), of Salem, Va.
 H. B. PHILLIPS (S. B., Erskine, 1900), of Lexington, N. C.
 R. L. RAMSAY (A. B., Fredericksburg, 1899), of Fredericksburg, Va.
 J. E. ROUTH, JR. (A. B., Johns Hopkins, 1900), of Petersburg, Va.
 G. B. SANDERLIN (A. B., Wake Forest, 1899), of Belcross, N. C.
 L. W. SMITH (A. B., Washington and Lee, 1896), of Lexington, Va.
 L. S. TAYLOR (S. B., Swarthmore, 1898), of Philomont, Va.
 J. R. TUCKER (A. M., Randolph-Macon, 1900), of Moffatt's Creek, Va.
 H. M. WAGSTAFF (Ph. B., Univ. of N. Carolina, 1899), of Olive Hill, N. C.
 L. F. WILLIAMS (A. B., Trinity College, 1901), of Gatesville, N. C.
 C. H. YOUNG (A. M., Randolph-Macon, 1901), of Ashland, Va.

TO MARYLAND STUDENTS

IN THE SECOND YEAR

GERALD BENJAMIN ROSENHEIM.
 CHARLES HENRY SAYLOR.
 SAMUEL HYMAN SCHAPIRO.
 REGINALD STEVENSON OPIE.
 JOSIAS CLERK LEE HAWKINS.

IN THE FIRST YEAR

GEORGE PAUSCH.
 ROBERT BAMFORD ZEIGLER.
 LEMAN EDWIN GOLDMAN.
 BENJAMIN ABRAM BERNSTEIN.
 JOHN FRANCIS CREMEN.

HONORS OF THE UNDERGRADUATES

The standing of students in the graduating class, entitled to honorable mention, is as follows:

JOSEPH TATE SMITH, JR.
 JOHN COFFEY HILDT.
 WILLIAM URWICK MURKLAND.
 ROBERT SAMPSON LANIER.
 JAMES WALLACE BRYAN.
 GEORGE DRAYTON STRAYER.
 THEODORE WESLEY GLOCKER.
 CHARLES ALBERT ROBINSON, JR.
 CHARLES HENRY STUBENBAUCH.
 LOUIS ADELSDOFF.
 JAMES BAYARD GREGG CUSTIS, JR.
 WILLIAM WETHERALL AMMEN.

The standing of students of the second year, entitled to honorable mention, is as follows:

GERALD BENJAMIN ROSENHEIM.
 RALPH OTTOMAR FUERBRINOER.
 CHARLES HENRY SAYLOR.
 SAMUEL HYMAN SCHAPIRO.
 REGINALD STEVENSON OPIE.
 JOSIAS CLERK LEE HAWKINS.
 CHARLES ROBERT AUSTRIAN.
 HARRY EDWARD MUHLY.
 HENRY LOANE LLOYD.
 LUTHER MARTIN REYNOLDS WILLIS.
 WILBUR LESLIE LECRON.
 FRANK GIBSON PORTER.

The standing of students of the first year, entitled to honorable mention, is as follows:

GEORGE PAUSCH.
 ROBERT BAMFORD ZEIGLER.
 LEMAN EDWIN GOLDMAN.
 BENJAMIN ABRAM BERNSTEIN.
 JOHN FRANCIS CREMEN.
 SIDNEY WALLACE MURKLAND.
 WILLIAM RINGGOLD STRAUGHN.
 HARMON VAIL MORSE.
 IRVING HENRY KOHN.

FUND FOR RESEARCH IN POLITICAL ECONOMY

A year ago a citizen of Baltimore, who desired then, as now, that his name should not be made public, presented to the University the sum of fifteen hundred dollars to be devoted to a systematic investigation of the history, activity, and influence of labor organizations in the United States. During the present academic year this inquiry has been carried on by the Economic Seminary, under the direction of Dr. Hollander, with the result that at the present time a group of young men are actively engaged in the study of specific aspects of the labor question. In order to encourage and continue the investigation thus instituted, the same generous donor has now given a further sum of fifteen hundred dollars to be available during the academic year 1903-1904.

The Johns Hopkins Press of Baltimore.

LIST OF SERIAL PUBLICATIONS.

AMERICAN JOURNAL OF MATHEMATICS.

This journal was commenced in 1878, under the editorial direction of Professor Sylvester. Professor Frank Morley is now the Editor, with the co-operation of other mathematicians. Twenty-four volumes of about 400 pages each have been issued, and the twenty-fifth is in progress. It appears quarterly. Subscription \$5 per year. Single numbers \$1.50. A very few complete sets remain. These will be sold for \$100 per set.

AMERICAN CHEMICAL JOURNAL.

This journal was commenced in 1879, with Professor Remsen as Editor. Twenty-nine volumes of about 450 pages each have been issued, and the thirtieth is in progress. It appears monthly. Two volumes of six numbers and of about 500 pages each are issued yearly. Subscription \$5 per year. Single numbers 50 cents.

AMERICAN JOURNAL OF PHILOLOGY.

The publication of this journal commenced in 1879, under the editorial direction of Professor Gildersleeve. Twenty-three volumes of about 570 pages each have been issued, and the twenty-fourth is in progress. It appears four times yearly. Subscription \$3 per volume. Single numbers \$1. Only a few sets remain. Price will be stated on application.

STUDIES FROM THE BIOLOGICAL LABORATORY.

The publication of these papers commenced in 1879, under the direction of Professor Martin, with the assistance of Professor W. K. Brooks. Five volumes of 500 pages, octavo, and 40 plates each, have been issued.

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